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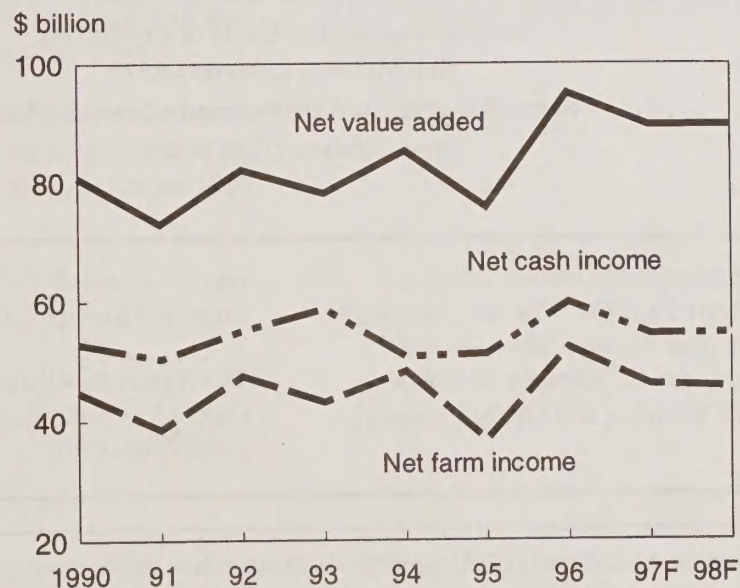
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Agricultural Income and Finance

Situation and Outlook Report

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**Farm income strong for 1997-98,
but below 1996 record**



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Summary

Farm Income Prospects Appear Favorable for 1997 and 1998

Net farm income is forecast near \$46 billion for both 1997 and 1998, above the average for the 1990s (\$44 billion), but below the record \$52 billion for 1996. The decline is due mainly to slightly lower expected receipts and a modest increase in expenses. Net cash income earned by farm operators, which excludes changes in farm inventories and non-cash income and expenses, is expected to be about \$54.5 billion in 1997 and 1998, slightly better than the 1990s average, although down from the record of nearly \$60 billion achieved in 1996. Net value added, the economic returns to all providers of resources to production agriculture (farm employees, landlords, lenders, in addition to the farm operator), is expected to be around \$89 billion in both 1997 and 1998, exceeded only by the \$95 billion achieved in 1996.

Cash receipts will remain relatively high in 1997 and 1998, even though they are unlikely to repeat the unusually favorable circumstances of 1996, when higher than average prices for major field crops remained strong even as large crops were being harvested. Crop and livestock receipts in 1997 are forecast to decline a modest \$1.6 billion from the 1996 record of \$202 billion. Farm marketings for 1998 are expected to remain near the 1997 forecast of about \$201 billion. The 1998 expectations are, of course, subject to considerable variability depending primarily on weather patterns over the critical spring and summer months and how export demand unfolds over the year. Uncertainty regarding the export market, triggered by the unstable economic situation in Asia, will be particularly important to farm income prospects for 1998. Export forecasts for Southeast Asia and South Asia have been adjusted downward for 1998.

Crop receipts are expected to trend downward in 1997 and in 1998. Corn represented about one-fifth of the record crop receipts in 1996. Average corn prices through October 1997

have been well below prices in 1996 and smaller exports appear to have contributed to the lower corn receipts in 1997. In contrast, livestock receipts are expected to about equal the year-earlier total of \$93 billion in 1997 and increase in 1998. The upward trend, which started with 1996, reverses the downward trend experienced from 1993 to 1995.

Total farm production expenses for are expected to grow in 1997 but at a slower annual rate than during 1993-1996. Expenses for 1998, however, could stabilize at or slightly below the 1997 level.

The value of U.S. farm business assets is expected to exceed \$1 trillion in 1997 and continue growing in 1998. The value of farm real estate, the largest share of the sector's assets, increased 5.9 percent during 1997 and is expected to grow 5 percent in 1998. Farm business debt is expected to grow more than 3 percent in both 1997 and 1998, much slower than the rate of growth of farm business assets. The strong growth in farm assets and modest expansion in farm debt imply a rising net worth (equity) for the farm sector in 1997 and 1998.

The debt-to-asset ratio is forecast at 14.8 percent in 1998, compared with 15.0 percent in 1997. The debt-to-asset ratio indicates the relative dependence of farm businesses on debt and their ability to use additional credit without impairing their risk-bearing ability. A lower debt-to-asset ratio indicates improved financial solvency conditions for the farm sector.

Agriculture Likely To Produce Strong 1997 and 1998 Income— Though Earnings Not Expected To Equal 1996 Record

While not equal to the 1996 record, farm income prospects for 1997 and 1998 remain favorable. Net value added, the economic returns to all the providers of resources to production agriculture (farm employees, landlords, lenders, in addition to the farm operator), is expected to be around \$89 billion in both 1997 and 1998. Compared with the first half of the 1990s, production agriculture's contribution to the national economy is forecast to be strong. But, value added for 1997 and 1998 is not expected to reach the nearly \$95 billion of 1996.

Net farm income, the economic return earned by farm operators, is forecast to be near \$46 billion for both 1997 and 1998. This figure is also above the average for the 1990s (\$44 billion), but lower than the record \$52 billion for 1996 (fig. 1). Net cash income, which excludes changes in farm inventories and non-cash income and expenses, is expected to be about \$54.5 billion in 1997 and 1998. While better than average for the 1990s, forecast net cash income is down from the nearly \$60 billion record achieved in 1996. A combination of good harvests and higher than average prices for major field crops, as well as prices that remained strong even as large crops were being harvested, led to the record farm income for 1996. This set of circumstances is unlikely to repeat itself in 1997 or 1998.

Farm Receipts for 1997 and 1998 Forecast Well Above the Early 1990s, But Lower Than 1996

Based on observations of production and prices during the calendar year, 1997 crop and livestock receipts are forecast to decline a modest \$1.6 billion from 1996's record of \$202 billion. Farm marketings for 1998 are expected to continue near 1997's forecast at about \$201 billion. These expectations, of course, are subject to considerable change as weather patterns, crop output, and the market's response to production and export demand unfold over the year. Uncertainty regarding the export market, triggered by the unstable economic situation in Asia and the continued effects of El Niño, will be particularly important in assessing farm income prospects for 1998. Export forecasts for Southeast Asia and South Asia have already been adjusted downward by \$500 million for fiscal year 1998 due to the financial crisis in the area.

The lower expected cash receipts for 1997 and 1998 stem from somewhat smaller crop returns. Crop receipts are expected to fall some in 1997, and again in 1998. By contrast, livestock receipts are expected to increase in 1998 (fig. 2). The upward direction of livestock receipts, which

started with 1996, reverses the downward trend of 1993-95. Expenses are expected to grow in 1997, but at a slower annual rate than in 1993-96. Expenses for 1998, however, could stabilize at or slightly below the 1997 level. The lower farm income forecasts for 1997 and 1998 are the product of the small declines in expected receipts from 1996 and a modest increase in expenses, at least for 1997 (fig. 3).

Lower Corn Prices Major Factor in Lower Crop Receipts for 1997 and 1998

Farmers will earn less from 1997 and 1998 crop sales than the record \$109 billion for 1996, due mostly to anticipated lower prices for wheat and feed grains. Corn and wheat, which had accounted for much of the gain in crop receipts in 1995 and 1996, are the major contributors to the fall in cash receipts in 1997 (fig. 4).

Corn, which is the largest component of crop receipts, represented about one-fifth of the record crop receipts in 1996. With prices that have ranged from 25 cents to \$2.00 below the same months in 1996 (fig. 5), and a significant share of 1997's slightly larger crop still to be marketed during calendar 1998, corn receipts in 1997 are expected to fall around \$3 billion from 1996. Smaller exports appear to have contributed to the lower corn receipts. Corn exports, which totaled 52 million metric tons valued at more than \$8 billion in 1996, have been lower each quarter in 1997. The quantity of corn exports through the first three quarters of 1997 is approximately 15 percent less than in 1996 and export value is off by a third.

A slightly larger 1998 corn crop, and prices similar to 1997, would yield cash receipts for corn that are close to 1997's forecast. Changing expectations of corn production, as the harvest approaches, could affect 1998 corn prices and receipts. The impact of altered expectations would probably only begin to emerge in the late summer or fall of 1998. A smaller than expected 1998 harvest could boost corn prices later in the year. By then a considerable share of 1998 corn receipts will have already been derived from corn produced in 1997 and sold in the first half of calendar 1998. By way of example, much of the impact of the small 1995 corn harvest was to increase prices during the first half of 1996, contributing to larger receipts in calendar year 1996.

It is probably as important to keep a sharp eye on developments in the export market for U.S. corn, which could affect prices at any time during 1998. An expansion in export demand over calendar 1997 could increase 1998 receipts, while a further fall in corn exports could increase domestic

stocks and put downward pressure on prices. Since August, the USDA has reduced its fiscal year 1998 corn export forecast by 3.5 million tons or \$700 million. Exports to Asia, which represented about 65 percent of the export market value in 1996, have been running about 33 percent lower through the third quarter of 1997. The Southeast Asian market grew from nothing in 1993 to 4-5 percent of total U.S. corn exports in 1995 and 1996. Korea had captured 15 percent of the U.S. corn export market by 1995-96. Both markets have fallen off considerably in 1997, particularly from competition by China. The economic and market conditions in Asia, and their impact on U.S. exports, will be followed closely in 1998.

Wheat Receipts Also Expected To Fall in 1997 And 1998

Wheat receipts are expected to fall about \$1 billion in 1997, down from almost \$10 billion in 1996. Receipts from wheat sales are likely to decline a bit more in 1998. Wheat production in 1997 was the highest since 1990 and prices were pressured downward by abundant supplies both in domestic and global markets. Wheat exports have been much lower than in 1996. Compared with a year earlier, overseas sales were off by 25 percent in quantity and about 40 percent lower in value through the first three quarters of 1997. Total 1997 wheat exports will fall well short of the \$6.2 billion achieved in 1996. Under the pressure of abundant supply and lower exports, monthly wheat prices for 1997 have been lower than a year earlier, typically by a dollar or more per bushel.

With an average or better crop, and increased stocks from 1997's large harvest, wheat prices and receipts may be expected to be somewhat lower in 1998. Important to the final outcome of 1998 U.S. wheat receipts will be changes in demand by importers and supply from competing exporters. Changing export conditions could become the critical factor in the contribution of wheat production and sales to 1998 farm income.

Increased Soybean Sales Offset Falling Grain Receipts

Increased soybean receipts prevented total crop receipts forecast in 1997 from declining further and will also add stability in 1998. Soybeans are expected to earn close to \$2 billion more in 1997 than the record \$16.2 billion in 1996. The 1997 increase follows the upward trend of soybean receipts occurring throughout the 1990s. Prices in 1997 were above 1996 until harvest. With the largest acreage ever planted to soybeans, 70 million acres, and a yield of 39

bushels per acre, there will be a record 1997 production to sell. Even with the larger 1997 crop, prices after the harvest have remained fairly strong. Undoubtedly, a vigorous export market has contributed to the increase in 1997 soybean receipts. A lower output and slower international trade in 1998 could lead to a modest drop in soybean receipts. Points to watch in 1998 will be the acreage planted at home, record crops forecast in Argentina and Brazil, and demand in the export market. U.S. acreage was nearly 71 million acres in 1997, well above the average of 60 million acres planted from 1986 to 1996. U.S. planted area in 1998 will likely decline from the year earlier record. The total area planted will depend not only on soybean price expectations, but also on how the planting season evolves for corn and other earlier seeded crops.

Livestock Receipts On Upturn

Livestock receipts in 1997 should about equal the \$93 billion attained in 1996 and move modestly higher in 1998. Higher beef cattle prices—due to reductions in the beef herd—will be the most important influence. After 3 years of steady declines in cattle and calf receipts, 1997 will be the turnaround year. Even so, cattle and calf receipts will fall considerably short of the 1993 level, before receipts began to decline. With 1997 hog production expected to be at least as high as in 1996 and still greater in 1998, hog receipts in 1997 and 1998 are likely to stay at roughly the \$12 billion achieved in 1996, even with lower expected prices. Smaller pork exports anticipated to Asia are one factor in lower pork prices, but the major factor is the large supply of pork available on the market.

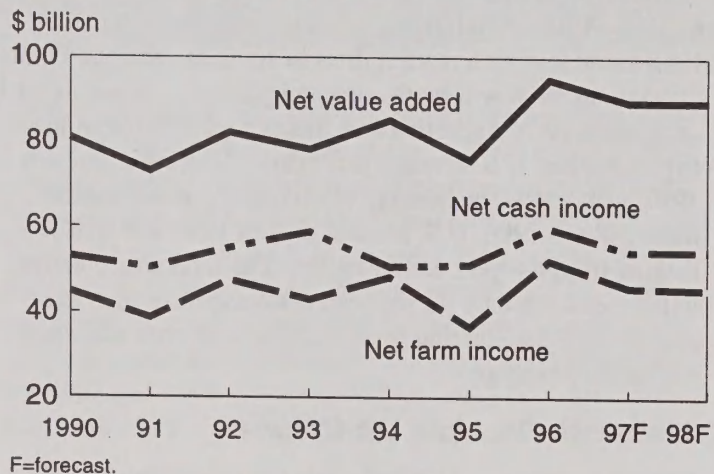
Future Government Payments Will Be Lower

Already a relatively small portion of cash sources of income (3.3 percent in 1996), direct government payments are expected to begin declining in 1998. Production flexibility contract payments in 1996 and 1997 are adjusted for payments of previous years' deficiency payments that occurred in those calendar years as well as repayments of unearned deficiency payments that are due in those years. For example, production flexibility contract payments in 1997 were augmented by over \$1 billion of corn and sorghum deficiency payments from the 1995 program that were required to be repaid by recipients in 1997. Payments in 1998 will be governed by the new legislation, and the total will begin to follow the declining levels allocated for production flexibility payments through the year 2002 (fig. 6).

Figure 1

Net value-added, net farm income, and net cash income

Farm income strong for 1997-98, but below record 1996

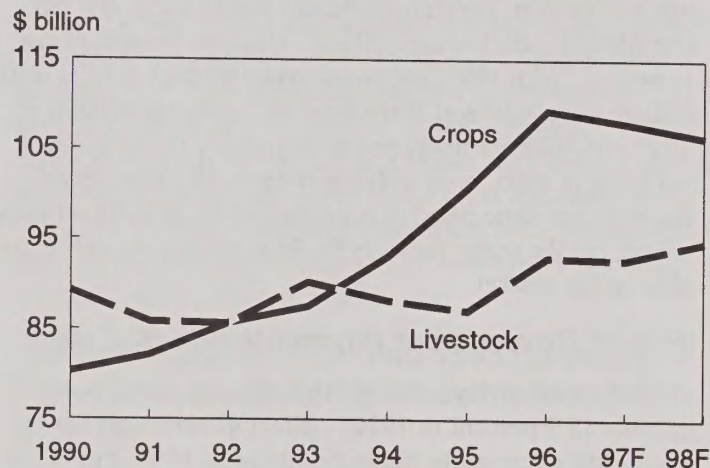


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Figure 2

Crop and animal cash receipts

After 3-year slump, livestock receipts increasing again

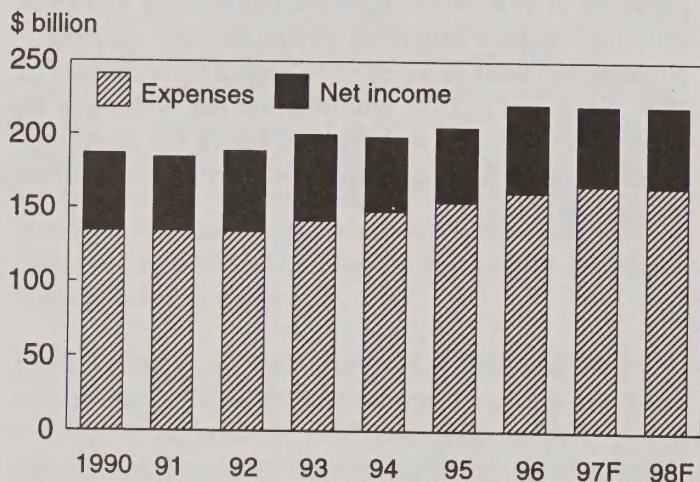


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Figure 3

Expenses and net cash income

Cash receipts lower and expenses higher in 1997-98



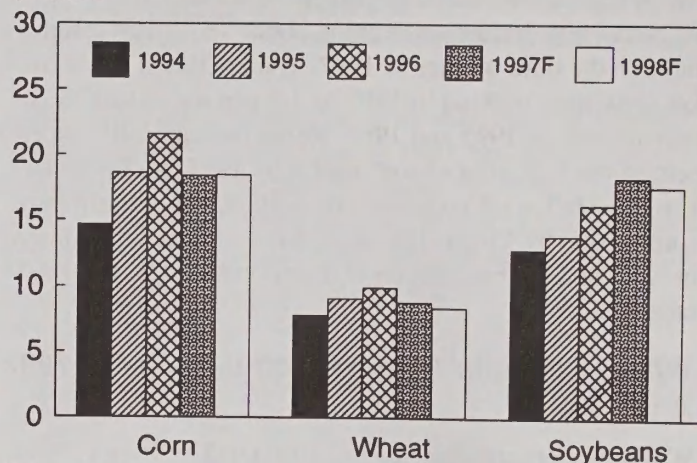
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Figure 4

Corn, wheat, and soybean cash receipts

Corn and wheat receipts for 1997-98 not equal to 1996 peak

\$ billion



F=forecast.

Figure 5

Monthly corn prices

Corn prices in 1997 well below 1996

Dollars per bushel

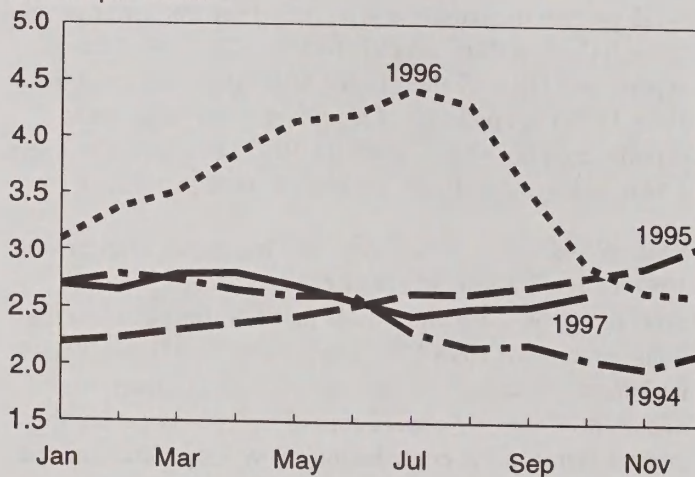
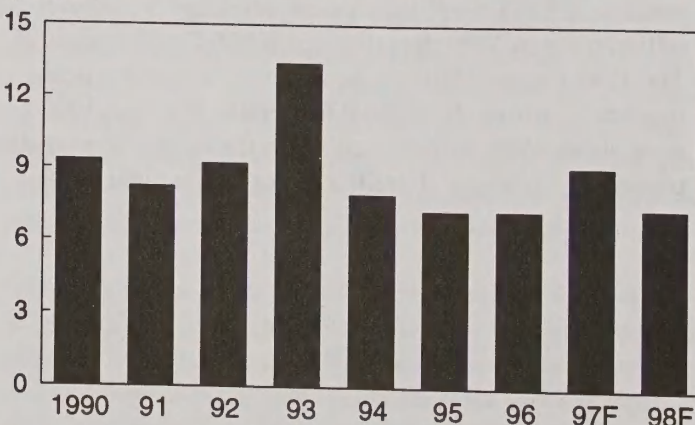


Figure 6

Government payments

Government payments to decline under 1996 Farm Act beginning in 1998

\$ billion



F=forecast.

Table 1 --Leading commodities for cash receipts, United States, 1996 and standard deviation, maximum and minimum values, 1990-96

Commodity	Rank	1996 value	Standard deviation	Minimum value	Maximum value
Million dollars					
All commodities		202,339	12,221	167,864	202,339
All livestock & products		92,814	2,574	85,637	92,814
All crops		109,425	10,580	80,297	109,425
Cattle and calves	1	31,138	3,066	31,138	39,362
Dairy products	2	22,834	1,454	18,007	22,834
Corn	3	21,573	2,970	13,348	21,573
Soybeans	4	16,211	1,931	10,756	16,211
Broilers	5	13,906	2,031	8,365	13,906
Hogs	6	12,644	972	9,883	12,644
Greenhouse/nursery	7	10,887	789	8,677	10,887
Wheat	8	9,956	1,359	6,283	9,956
Cotton	9	7,461	954	5,192	7,461
Chicken eggs	10	4,757	416	3,384	4,757

American farmers from the start of the decade have seen their cash receipts rise by better than 20 percent. Most of the growth has come from corn, soybeans, broilers, wheat and dairy. Much of the growth in corn and soybeans has been in the past couple of years, while growth in broilers, wheat, and dairy has been steady through the decade. Strong demand (plantings for new homes and replantings for old homes) for greenhouse/nursery goods has enabled cash receipts to horticultural producers to increase every year during the decade. Receipts from cattle and calves, still the number one cash producing industry in agriculture at a little over \$31 billion, have shrunk by \$8 billion from the early 1990s. Composition of the top ranked commodities, which account for 75 percent of cash receipts from all commodities, remained constant during the 1990s. There was some shifting in their order during this period: cash receipts from broilers and soybeans advanced faster than hogs and greenhouse/nursery. Among the top commodities over the past 6 years, corn, broilers, and wheat showed the most relative volatility in cash receipts.

Table 2 --U.S. supply, selected commodities, United States, calendar year 1996 and standard deviation, maximum and minimum values, 1990-96

Commodity		1996 value	Standard deviation	Minimum value	Maximum value
Cattle	mil. lbs.	25,419	1,196	22,800	25,419
Milk	mil. lbs.	154,268	3,428	147,697	156,759
Corn	mil. bu.	9,293	1,408	6,336	10,103
Soybeans	mil. bu.	2,382	300	1,871	2,722
Broilers	mil. lbs.	26,336	2,787	19,728	27,281
Hogs	mil. lbs.	17,085	600	15,948	17,812
Wheat	mil. bu.	2,285	227	1,980	2,730
Cotton	thou. bales	18,942	1,455	15,505	19,662
Eggs	mil. doz.	6,358	236	5,801	6,450

Corn, soybean, and cotton output has shown a modest trend upward during the 1990s except for years of rainfall shortages or excesses that restricted yields. Broiler and egg production expanded almost every year with the former at a decreasing rate and the latter at a nearly constant rate. For broilers, annual growth rates ranged from 5 to 8 percent in the early 1990s, and 3 to 4 percent in the mid-1990s. Egg supplies grew at nearly a constant rate of 2 percent. Cattle producers during the early 1990s brought a steady supply of beef to the markets, but increased supply by almost 6 percent in 1994. As a result, cattle supplies in the mid 1990s were around 12 percent higher than in the early 1990s. At this point in the cattle cycle, their prices dropped and cash receipts fell.

Table 3 --U.S. prices, selected commodities, United States, calendar Year, 1996 and standard deviation, maximum and minimum values, 1990-96

Commodity		1996	Standard deviation	Minimum value	Maximum value
Beef cattle	\$\text{cwt.}	58.70	5.86	58.70	74.60
Beef calf	\$\text{cwt.}	58.40	13.04	58.40	98.00
Milk	\$\text{cwt.}	14.88	0.79	12.27	14.88
Corn	\$\text{bu.}	2.70	0.37	2.07	3.24
Soybeans	\$\text{bu.}	6.85	0.55	5.48	6.85
Broilers	\$\text{lb.}	0.39	0.03	0.31	0.39
Hogs	\$\text{cwt.}	55.60	7.88	30.90	55.60
Wheat	\$\text{bu.}	4.30	0.65	2.61	4.55
Cotton	\$\text{lb.}	0.71	0.08	0.55	0.77
Eggs	\$\text{doz.}	0.76	0.06	0.58	0.76

Farm prices for hogs, broilers, milk, and eggs reached their highest for the 1990-96 period in 1996. Hog prices dropped from the start of the decade, seem to have reached a low by 1994, and then rose through 1996. Broiler prices have risen almost every year. Milk prices have remained the steadiest of all the major commodities during 1990-96. Cattle and calf producers have seen beef prices decline since 1993, with an apparent bottoming out in 1996. Among crops, corn and soybean prices peaked in 1996. The pattern of corn and soybean prices was a series of peaks and valleys with a greater upside than a downside variation. Cotton and wheat prices were highest in 1995.

Exports Expected To Contribute Less to Farm Income

Throughout this decade, the earnings of U.S. farmers have been sustained and augmented by growth in exports (fig. 7). In late 1997, the international economic forces underlying these large exports have deteriorated, likely dampening growth prospects for 1998.

There appears to be a dramatic loss in confidence by foreign investors/lenders in the economic prospects of individual Asian countries. This lack of confidence, and repayment problems, have led to severe discounting of the value of these countries' currencies. Devaluation may not have run its course, as countries in emerging markets with weak banking systems and underdeveloped capital markets are forced to allow the value of their currencies to drop to attract funds from overseas.

Currency devaluation in a country that either imports U.S. products or exports the same products as the United States will generally have negative implications for prices and quantities of U.S. exports. The devaluation of a country's currency affects all import transactions because the buyer has to purchase dollars with which to pay the seller before the purchase can be effected. A devalued currency will purchase fewer dollars, and the effect is to raise the domestic prices of imported goods. A devaluation has inflationary impacts on consumers, reducing their real incomes and reducing the quantity of the goods previously imported from the United States. Asian countries are net importers of agricultural products, due to scarcity of cultivatable land, and in recent years have been increasingly important customers for U.S. agricultural products as per capita income has grown with the region's economic prosperity. (figs. 8 & 9)

The recent currency devaluations also translate into declining effective demand from Asia for exports of other countries supplying agricultural products—Australia, Brazil, and Canada, among others. The slackening demand will increase the competition among exporting countries for the remaining markets, putting downward pressures on export prices.

In the last decade, U.S. agricultural products have become more competitive in import markets around the world. Agricultural trade consists of two major product groups: higher valued products and bulk commodities. **High value agricultural products** are comprised of several categories of perishable and/or processed goods: *Consumer ready processed* products include grain-based foods, meats, and beverages. *Intermediate products* are commodities having undergone some minimal degree of processing such as feed, flour, and refined sugar. *Horticultural and fresh produce* encompasses fruits, vegetables, and flowers. **Bulk commodities** are comprised of unmilled grains and oilseeds, raw cotton, and unmanufactured tobacco.

Technological change and the easing of barriers to trade have facilitated increased trade in higher valued products. Improvements in container technology have made it feasible to safely transport perishable products. Increased competition in the shipping industry has encouraged improved practices that allow containerized products to be transferred with minimal effort across road, rail, water, and air transport systems. With the trade barriers falling and the transportation of perishables becoming easier, U.S. agriculture was well positioned to respond to increased effective demand.

Rapid expansion in demand occurred in the 1990s throughout Asia, particularly Southeast Asia, due to expansive growth in national economies. Economic growth and urbanization created income growth to fuel effective demand for perishable and processed agricultural products. Climatic conditions, high population density, and scarcity of cultivatable land resources constrained agricultural production within the region. Expanding effective demand and limited production response created opportunities for exporters of U.S. agricultural products, both higher valued and bulk.

The economies of the Southeast Asian countries have been booming during the 1990s, and this growth contributed significantly to an unparalleled year for U.S. agricultural exports in 1996. Naturally endowed with temperate climate and an abundance of farmland, the United States is the world's principal supplier of bulk agricultural commodities such as wheat, corn, soybeans, and cotton. Higher grain and soybean prices in calendar 1996 boosted the value of U.S. bulk commodities exported. Shipments of the higher valued exports also rose in 1996, the eleventh consecutive year of growth for this category of agricultural exports.

With tight world supplies of grains and soybeans, the favorable prices for U.S. exports continued into the first half of 1997. The value of U.S. exports has softened somewhat in 1997, but is down only from the record levels of 1996. Soybeans have continued to be in short supply and prices have been especially strong through most of the year. Exports of all categories of horticultural products—fruits, vegetables, tree nuts, and tropical products—have remained strong and continue to rise in value. Although horticultural products provide a minor share of U.S. exports, growth in horticultural product exports to Asian markets will likely slow drastically.

In 1998, the export outlook is less sanguine. Economic troubles surfacing in late 1997 in the once booming Asian economies have developed into a series of currency crises. The currencies of many small Southeast Asian countries have been sharply devalued relative to the U.S. dollar. South Korea has also fallen victim, and larger countries such as Russia, Japan, and Brazil are threatened. Even with stable

incomes, Asian consumers could not have maintained the 1996 growth rates for purchases of U.S. exports following currency devaluations. And the extent to which the economic troubles in the Asian countries lower national incomes, consumers will demand less of the higher priced U.S. goods.

Brazil and Argentina follow the United States as major producers of oilseeds and are competitors with their oilseed and oilseed product exports. The two countries, along with Australia, are also leading producers of other agricultural commodities. Already, farmers in Brazil and Argentina have responded to the exceptionally favorable world market prices for soybeans by substantially expanding planted acreage. Weather in the Southern Hemisphere has been favorable in the earlier stages of the production cycle, pointing to a large harvests in the spring of 1998 if the favorable weather holds. India is also expecting a record soybean harvest.

In summary, a combination of devalued currencies and diminished economic growth in other countries will likely reduce the growth in demand for U.S. agricultural products. As a result, lesser quantities of U.S. products may be sold in export, depressing prices in the domestic market. The alternative is that prices may have to decline to stimulate sales. If either course of action materializes, the consequence will be reduced earnings for U.S. farmers.

Figure 7

Value of U.S. farm sector production and exports

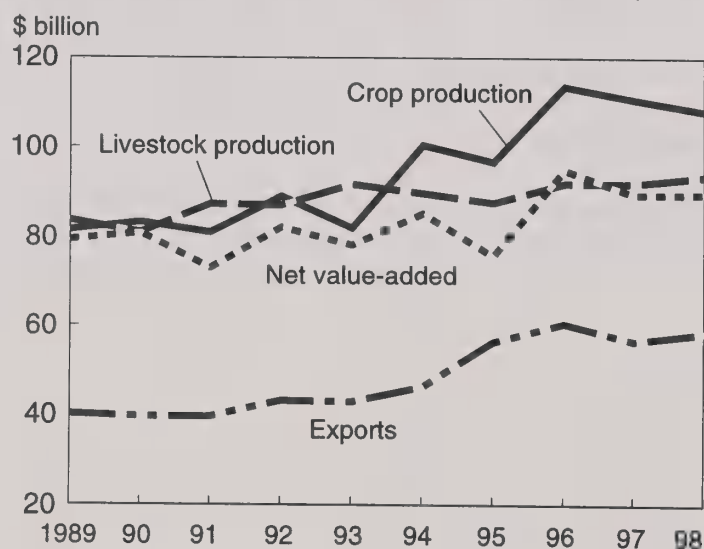


Figure 8

Southeast Asia imports from U.S. concentrated in four markets

\$ billion

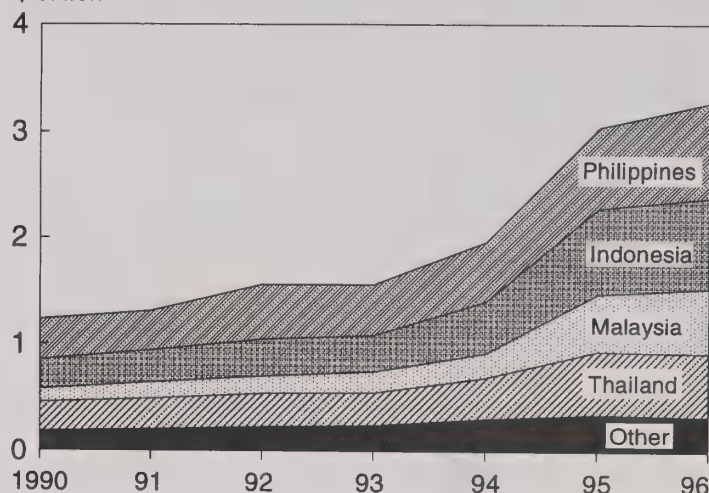
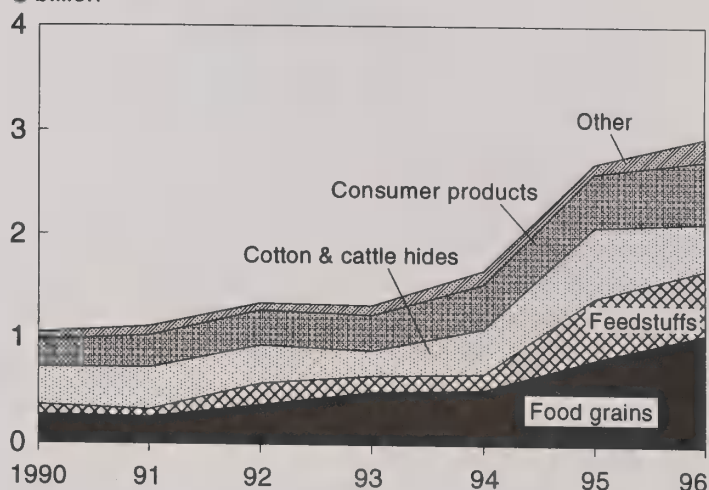


Figure 9

Food grains and feed are largest U.S. exports to Southeast Asia

\$ billion



Expenses Rising Modestly in 1997, May Be Steady to Slightly Lower in 1998

Total farm production expenses are forecast to increase 2.7 percent (\$4.8 billion) in 1997. The increase is the smallest since total expenses decreased in 1992. In 1993-96, production expenses rose between \$6.7 and \$7.6 billion (between 4 and 5 percent) each year. In the last 3 years, the increase in total outlays occurred despite decreases of around \$1 billion each year in livestock and poultry purchases. By contrast, in 1997, the \$2.7 billion increase in livestock and poultry purchases will account for a larger proportion of the increase in total costs than any single expense item has during the previous 4 years. Expenses other than livestock and poultry purchases are forecast to rise only 1.3 percent in 1997. The only other individual expense item that should increase significantly is hired labor.

Large increases in cattle prices and higher farm wage rates are the major factors propelling the increase in expenses forecast in 1997. Greater numbers of livestock and poultry on feed and modest increases in crop production played smaller roles. Significantly lower feed prices, lower interest rates, and relatively small increases in most other prices paid for production items are a major factor dampening growth in production expenses. ERS forecasts that the overall level of prices paid for production items, interest, taxes, and wages will rise only 1.6 percent. The increase would be the smallest since 1993. Moreover, without the 24-percent increase in the prices paid for livestock and poultry, the general level of prices paid in 1997 would be the same as in 1996.

In 1998, in response to slightly lower planted acreage and a fall in the number of cattle on feed, total outlays are forecast down around \$600 million. This would be the first decrease in total farm production expenses since 1992. The relatively small increase in forecast prices paid for production items, interest, taxes, and wages is an important factor in 1998 too.

Livestock-related Intermediate Consumption Outlays

During 1997, livestock and poultry producers responded predictably to much lower grain prices throughout the year and improved prices received for slaughter and feeder animals. Cattle on feed in each month have been up compared to a year earlier. Hog inventories have also been increasing. Poultry production continued its increase spurred by both domestic and export demand. Hog and poultry production will again increase in 1998. However, the number of cattle on feed will fall as the supply of feeder cattle outside feedlots tightens.

Feed prices have fallen more than 5 percent in 1997. However, both the number of animals on feed and concen-

trates fed per head are up. As a result of incorporating this factor, we have raised our forecast of 1997 feed purchases \$1.4 billion to \$25.1 billion, a drop of less than 1 percent from 1996 feed expenditures. In 1998, feed expenditures are forecast to drop around 3 percent due primarily to continued low feed prices and the fall in the number of cattle on feed. If these forecasts hold up, the decreases will be the first in feed expenditures since 1991. Between 1992 and 1996, feed expenses rose between \$800 million and \$1.4 billion (an average of more than 4 percent) each year.

The increase in livestock and poultry purchases between 1996 and 1997 is primarily due to a 24-percent increase in the price of feeder cattle and an increase in net placements on feed. In each of the other species, increases in either quantity or price are nearly offset by a decline in the other factor. In 1998, the \$600 million decrease is due primarily to a 5-percent decrease in livestock purchases. This drop is the consequence of an expected drop in cattle placements on feed and an increase in feeder cattle prices.

Crop-related Intermediate Consumption Outlays

The principal crop-related expenses, seeds, fertilizer, and pesticides, are forecast to be up around \$400 million in 1997, an increase of about 1.5 percent. This is the smallest increase in these expenses since 1992, when they decreased. Over the last 3 years, these expenses have risen more than 6.5 percent each year.

Planted acreage of the 12 principal crops in 1997 was nearly identical to 1996, so changes in the prices paid for these items accounted for nearly all of the movement in forecast 1997 crop-related expenses. However, it is possible that fertilizer expenses will fall a little more and pesticides increase less. Multiplying 1996 fertilizer and pesticide application rates for individual crops by their planted acres in 1997 yields slight decreases in total amounts applied. On the other hand, prices paid for nitrogenate fertilizer materials have fallen around 9 percent since March and remained at counter-cyclically low levels in October. China's cessation of urea purchases is responsible for this drop. Farmers may buy a greater-than-usual amount of these fertilizers during the final months of 1997 for use in 1998 to avoid likely price increases nearer to the planting season. The November 1997 Feed Outlook cited stronger-than-usual late-summer fertilizer shipments on eastern railroads as a factor contributing to the Union-Pacific rail tie-up.

Seed expenses are forecast for 1998 to be nearly equal to 1997. Forecast 1998 fertilizer expenses are up 1.5 percent as the forecast prices paid rise 2.5 percent. Recent indications

of a decline in natural gas prices, however, could reverse the direction of fertilizer expenses in 1998, as natural gas is key to much of nitrogen production and nitrogen weighs heavily in fertilizer expenses. Forecast 1998 pesticide expenses are up less than 1 percent as the prices paid for agricultural chemicals rise 1.6 percent.

General Intermediate Consumption Outlays

All other intermediate consumption outlays are forecast up around \$750 million (1.5 percent) in 1997, nearly identical to their increase in 1996. As with intermediate expenses directly related to crop production, forecasts of energy expenditures and machine hire and custom work expenses are based on planted acreage and prices paid for these items. The change in these items in 1997 also reflects the forecast change in their prices. Repair and maintenance expenses are pegged to a combination of the general prices paid level and prices paid for building and fencing and supplies. The 5-percent rise in forecast 1997 marketing, storage, and transportation expenses results from a 4-percent increase in crop output and the small increase in general prices paid.

Government Transactions and Capital Consumption

Property taxes are forecast to continue a slow, steady rise in line with increases in land values. Capital consumption expenses are forecast to increase less than \$100 million (0.5 percent) in both 1997 and 1998. Year-to-year movements in capital consumption depend almost entirely on changes in the prices of building materials, wage rates, motor vehicles, and machinery and equipment. Price changes are the key variable in estimating the replacement value of existing capital stock.

Factor Payments to Nonoperators

Hired labor expenses are forecast to rise around \$900 million (6.0 percent) in 1997. The increase is due to a 2.4-per-

cent increase in total farm output and a nearly 4.0-percent rise in farm wage rates. The forecast increase in 1998 hired labor reflects a forecast increase of around 3 percent in farm wage rates and a modest increase in total farm output. The 1997 increase will be the fourth time in 5 years that hired labor has increased more than \$800 million. Labor expenses in 1997 are 24 percent above their 1992 level. Since 1992, farm wage rates have risen around 16 percent. The \$100-million drop in net rent to nonoperators in 1997 and the \$200-million drop in 1998 are due primarily to declines in crop cash receipts.

Average debt and average interest rates moved in opposite directions in 1997, producing the smallest increase in interest expense in the last 4 years. Average debt during 1997 is forecast to increase around 3 percent. Average interest rates on farm business debt during 1997 fell 2.1 percent. By itself, the increase in average debt would have produced a \$500-million increase in interest expenses. However, the fall in average interest rates offset approximately 60 percent of this increase.

Average debt during 1998 is forecast to be up more than 3 percent. As in 1997, lower average interest rates will likely offset the rise in average debt somewhat in 1998. As a result, 1998 interest expenses are forecast to rise around 1.5 percent (\$200 million).

Forecast increases in interest expenses in 1997 and 1998 are less than in 1996, making 1996-98 increases all below the 8.4-percent increases in 1994 and 1995. Average debt has increased steadily since 1992. Changes in interest rates have been responsible for differences in the movement in interest expenses since 1993. The changes in average debt during 1997 and 1998 are the largest since 1983 but are still far lower than the nominal increases between 1973 and 1982, which ranged between \$7.2 and \$20.3 billion.

Marginal Increase Forecast for Crop Costs of Production in 1998

USDA forecasts higher prices for most agricultural inputs in 1998. The magnitude of the increases ranges from essentially no change for farm machinery and equipment purchases to 3.5 percent for autos and trucks. The only input category expected to see lower 1998 prices is rental rates, primarily share rents, which are expected to decrease as the crops' value of production decreases.

Higher input prices do not equally affect one crop's production costs compared with another. To measure the effect at the crop level requires one to examine the production structure of each crop and the production systems used to grow and harvest the crop.

Corn is the number one U.S. crop in acreage and value of production, followed by soybeans and wheat. Corn is grown from hybrid seed and the crop is a heavy user of fertilizer. While fertilizer prices were down in 1997, they are expected to rebound in 1998 to slightly over 1996 levels. This will raise fertilizer costs for corn growers, and for cotton growers who also are heavy fertilizer users, but will have only a minimal effect on other crops. Rising seed prices in both 1997 and 1998 will also negatively affect corn growers. Total cash costs of growing corn are expected to rise about 1.5 percent next year, with total economic costs rising only 1 percent as lower land costs offset some of the higher cash costs.

Wheat growers are not forecast to see any major changes with a slightly less than 1 percent total cost increase. Soybeans, however, could see a cost decrease. With the exception of land ownership costs, chemicals account for the largest share of soybean production costs in all major growing regions except the Southeast. Chemical prices are expected to rise an average 1.6 percent in 1998. Soybean growers' cash expenses are expected to rise an average 1.5 percent, but longer run total economic costs are forecast down slightly as land ownership costs decrease 5 percent. What on the surface looks good could really have a negative impact on growers' net returns. Behind the drop in land costs is the smaller value received by share rent landlords for their share of soybean production, due to potentially lower 1998/99 soybean prices. If soybean prices fall, growers will pay less to landlords but will also receive less in sales, so lower costs of production do not necessarily mean a higher return for farmers.

Crop yields and prices are difficult to predict and affect cost of production forecasts in several ways. ERS measures land ownership costs as a function of cash and share rental rates. The share cost is a function of price, yield, and the percent of the crop provided to the landlord as payment. Harvesting costs, as reflected in expected fuel use, machinery repair and ownership cost, and labor also adjust with changing yields.

Costs Near Breakeven with Government Payments

If 1998 yields and prices are near their 1992-96 average, corn, wheat, soybean, and cotton farmers will likely cover variable and fixed cash production costs. However, the 5-year average price is not enough to cover total economic costs. Corn growers will still need Federal transition payments to cover total ownership costs and remain profitable, but soybean growers could see a small loss. And even with Federal assistance at this year's levels, cotton and wheat growers will not likely cover total economic costs, on average.

Of course, these breakeven costs only represent the average and ERS research shows that for wheat, 60 percent of farmers in 1994 produced below the average cost of production. This research also showed that lower-cost wheat growers used much less hired labor and custom services, so while the prices of these inputs are rising faster than other inputs, lower-cost wheat growers will be less affected.

For corn growers, regional differences in production systems become important. For example, nitrogen application rates are lower in the Northeast and Southeast and rising prices for fertilizers will have less impact on corn growers in these two regions. Southeastern corn growers are also least dependent on custom services whose price is expected to increase nearly 3.5 percent in 1998. However, what Southeastern farmers save on custom services they pay for in increased hired labor expenses, so lower custom expenses will likely be offset by higher labor expenses in the region. Northeastern and Southeastern corn growers still operate at a slight cost disadvantage compared with farmers in the Plains and North Central regions. The latest ERS survey of corn growers in 1991 showed that more than 80 percent of North Central and Plains corn producers had variable cash costs less than \$2 per bushel, compared with 67 percent in the Southeast and 48 percent in the Northeast.

The lowest per-acre costs for soybean growers are found in the Northern Plains and yields there can be at or above average, depending on the year's weather. The region tends to have the lowest fertilizer and chemical costs, which should be an advantage in 1998, given rising prices for these inputs. The regional distribution of soybean production can change dramatically as the growing season progresses. Because soybeans have a shorter growing season than corn, cotton, and rice (crops frequently found in rotation with soybeans), there is frequently time to plant soybeans if planting of corn, cotton, and rice crops are delayed or abandoned. This happened in 1997 in the South. These regional production shifts mean that the year's crop can come primarily from a higher-

cost region and that soybean prices become more difficult to forecast before planting data become available.

The overall picture for 1998 is, on average, marginally higher production costs per acre. Among growers, however, there are many options. Lower-cost growers are efficient producers who are covering costs and seeing generally positive returns. These growers will be able to absorb higher expenses and continue to make a profit. Higher-cost growers now have the option under current farm legislation to switch to more profitable crops, except fruits and vegetables, and continue to receive payments based on their production flexibility contracts. Surveys are showing that the more successful farmers and ranchers are using marketing and management

tools to their advantage. There has been a shift in regional production of some commodities like cotton, which is reappearing in the Southeast due to higher expected prices and farmers looking for alternatives to existing crops.

Cost of production forecasts are only available at the national level since only national average input prices are forecast. However, ERS' historical time series through 1996 of regional and national cost of production estimates for major U.S. crop and livestock enterprises are available on the Internet through the ERS homepage at www.econ.ag.gov/briefing/fbe/car. Estimates for 1997 cost of production, nationally and by region, will be released in electronic format in early October 1998.

Table 4 - - Production cost forecasts for selected U.S. field crops, 1998 1/

Item	Corn	Wheat	Soybeans	Cotton
Dollars per planted acre				
Cash expenses:				
Seed	25	10	15	17
Fertilizer	58	22	11	48
Chemicals	28	7	26	53
Custom operations 2/	10	5	4	21
Fuel, lube, and electricity	21	10	10	36
Repairs	17	14	10	30
Hired labor	9	5	7	43
Cotton ginning	n/a	n/a	n/a	58
Other variable cash expenses 3/	*	*	*	6
Total, variable cash expenses	168	72	82	313
General farm overhead	16	6	12	17
Taxes and insurance	24	10	21	24
Interest on operating loans	7	3	6	9
Interest on real estate	14	6	10	11
Total, fixed cash expenses	61	26	48	61
Total, cash expenses	229	98	131	374
Economic (full ownership) costs:				
Variable cash expenses	168	72	82	313
General farm overhead	16	6	12	17
Taxes and insurance	24	10	21	24
Capital replacement	36	25	22	57
Operating capital	5	2	2	9
Other nonland capital	14	12	12	20
Land	78	40	59	52
Unpaid labor	28	10	22	31
Total, economic (full-ownership) costs	367	178	232	524
Percent change from 1997 forecast				
Total cash costs	1.5	1.4	1.4	2.3
Variable cash costs	1.4	1.3	1.2	2.4
Fixed cash costs	1.8	1.8	1.8	1.8
Total economic costs	1.0	0.8	-0.5	1.9
-----\$/bushel-----				
Breakeven costs at 1992-96 average yield:				-----\$/pound-----
Variable cash costs	1.38	1.92	2.23	0.48
Variable plus fixed cash costs	1.88	2.62	3.55	0.57
Total economic costs	3.00	4.75	6.30	0.80

Totals may not add due to rounding. * = less than 50 cents. n/a = not applicable.

1/ Forecast are as of 11/1/97 and exclude direct effects of government programs.

2/ Cost of custom operations, technical services, and commercial drying.

3/ Cost of purchased irrigation water and baling.

Operator Household Income

Most farm households rely heavily on off-farm income to remain on the farm, because many farms are too small to support a modern standard of living. Most farms are small establishments because the official farm definition requires only \$1,000 worth of agricultural sales to qualify as a farm. Limited sales typically result from a modest level of resources devoted to farming or from a low return on farm assets. Farm operator households, on average, received only 16 percent of their income from farming in 1996 (table 5). Their household income from farm and off-farm sources, however, averaged \$50,361, similar to the \$47,123 average for all U.S. households.

Dependence on Farming

Dependence on farming varied with farm size, as measured by farm sales. For example, households operating commercial farms (sales of at least \$50,000) received 55 percent of their income from farming. These households, however, accounted for only 26 percent of all farm households. For households operating commercial farms, earnings from farming activities averaged \$40,623, and total household income averaged \$74,519, or 58 percent more than the average for all U.S. households. Between 1995 and 1996, average total income for households with commercial farms increased \$17,000 (not shown). About three-fourths of this increase came from farming activities, reflecting strong farm sector performance in 1996.

In contrast, households operating noncommercial farms (sales less than \$50,000), which made up 74 percent of all farm households, relied on off-farm sources for virtually all their income. On average, they lost money farming, but received \$45,418 in off-farm income. Wages and salaries were the largest component of their off-farm income, and accounted for 61 percent of their total off-farm income. Because of their off-farm income, their total average household income was on a par with the average for all U.S. households. Unlike their commercial counterparts, households operating noncommercial farms did not experience a statistically significant increase in total income between 1995 and 1996 (not shown).

The estimates for all households in table 5 are much closer to those for households operating noncommercial farms than those for households operating commercial farms. Because households operating noncommercial farms account for about three-quarters of all operator households, they have a major influence on estimates for operator households in general.

Economic Well-Being

Earnings of the operator household from farming activities is not a complete measure of economic well-being provided

by the farm. It leaves out some resources the farm business makes available to the household. For example, depreciation is an expense deducted from income that may not actually be spent during the current year. Depreciation in table 5 is based on what farmers report on their income tax returns, and probably overstates capital consumption. Depreciation was substantially larger in 1996 for households with commercial farms (\$21,657 per farm) than for households with noncommercial farms (\$1,800).

Nonmoney income, such as the imputed rental value of a farm-owned dwelling, is also excluded from the farm earnings measure. Nonmoney income represents a business contribution to household income because it frees up household cash that would otherwise be spent on housing. Finally, earnings of the operator household from farming activities does not reflect the large net worth and real estate base of many farm operator households.

The earnings from farming in table 5 also understate the contribution of farming to the income of households other than those classified as operator households (fig. 10). Although operator households are perhaps the most closely connected to farm businesses, other households share in net income from farming. For example, operator households may share net income of the farm with the households of partners and shareholders. Even farm proprietorships may share informally. For example, one sibling may operate the family farm, but share the farm's income with other siblings. Nonfamily corporations and cooperatives pay dividends to shareholders. Finally, households are also associated with nonfarm businesses involved in farming, such as contractors and nonfarm share landlords (fig. 10).

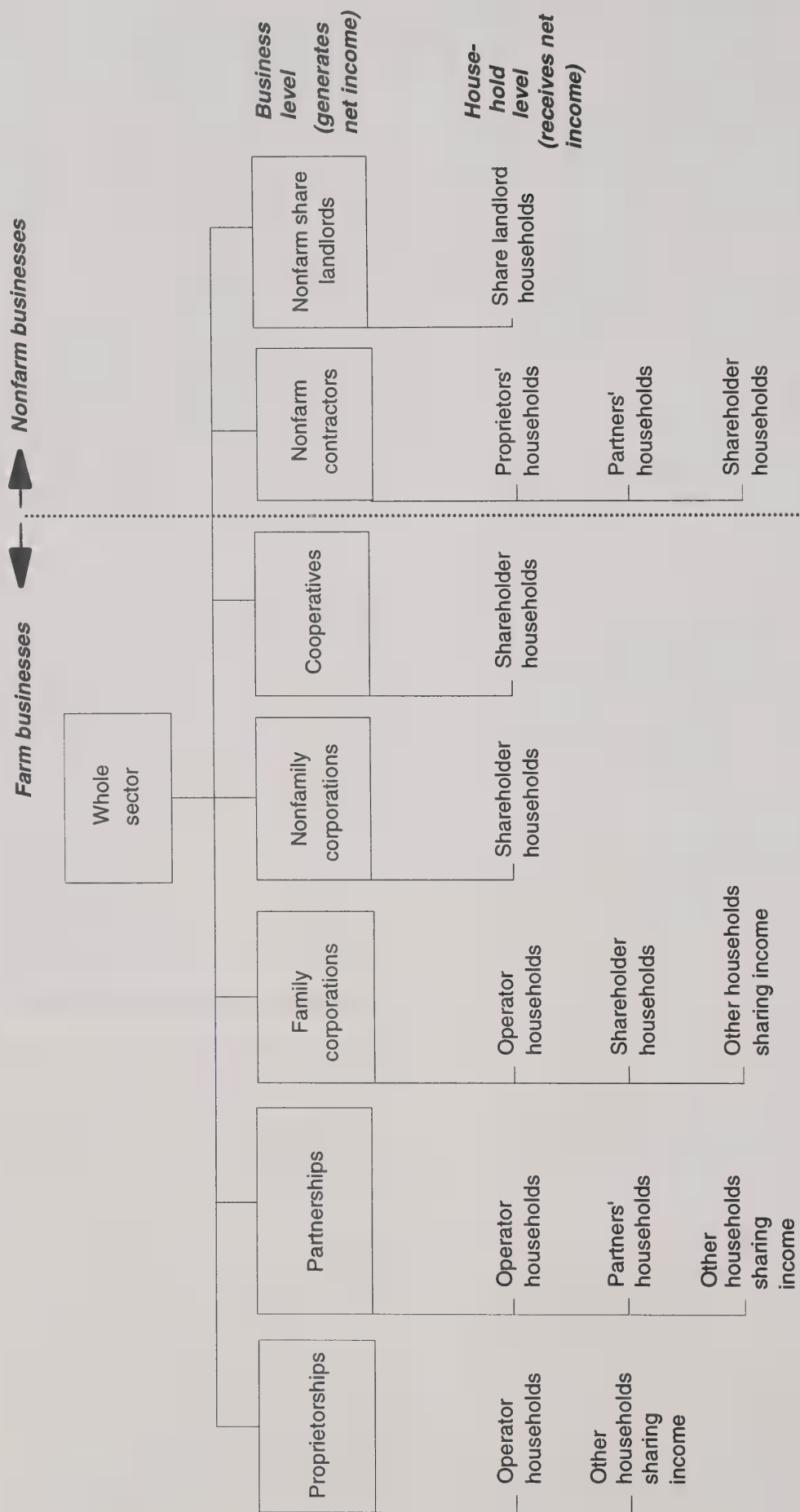
Forecasts for 1997 and 1998

Average operator household income is forecast to decrease from \$50,361 in 1996 to \$47,488 in 1997 (appendix table 3), although the decline is not statistically significant. The forecast also suggests that earnings of the operator household from farming will decline by about \$2,700 per household, while off-farm earnings will remain between \$42,000 and \$43,000.

One would expect the forecast decline in farm earnings to have the greatest effect on households operating commercial farms, based on the distribution of the increase in earnings from farming between 1995 and 1996. Average operator household earnings from farming activities increased approximately \$3,200, from \$4,720 in 1995 to \$7,906 in 1996. For households operating commercial farms, however, average earnings from farming increased from \$28,191 in 1995 to \$40,623 in 1996 (not shown). In contrast, average earnings from farming for households with noncommercial

Figure 10

Risk and income in the farm sector are shared by more entities than farm operators and their households



Source: Economic Research Service.

farms remained about the same in 1996 (-\$3,419) as in 1995 (-\$3,592) (not shown).

Households operating noncommercial farms will continue to rely heavily on off-farm income, particularly wages and salaries, for their livelihood. The demand for rural workers has been strong since the 1990-91 recession, with the tighter rural labor market resulting in higher real wages.

Although average operator household income is forecast to move from \$47,488 in 1997 to \$48,862 in 1998, neither forecast is statistically different from the 1996 estimate. Average earnings from farming will remain approximately the same in 1998.

Table 5.—Deriving farm operator household income estimates from the Agricultural Resource Management Study (ARMS) consistent with Current Population Survey (CPS) methodology, by farm size, 1996P¹

Item	Gross farm sales		All operator household
	Less than \$50,000 (noncommercial farms)	\$50,000 or more (commercial farms)	
	<i>Dollars per farm</i>		
Net cash farm business income ²	-2,737	60,414	13,502
Less depreciation ³	1,800	21,657	6,906
Less wages paid to operator ⁴	19	2,010	531
Less farmland rental income ⁵	*604	868	672
Less adjusted farm business income due to other household(s) ⁶	*-181	4,776	1,094
	<i>Dollars per farm operator household</i>		
Equals adjusted farm business income	-4,979	31,104	4,300
Plus wages paid to operator	*19	2,010	531
Plus net income from farmland rental ⁷	1,034	1,593	1,178
Equals farm self-employment income	-3,926	34,707	6,009
Plus other farm-related earnings ⁸	*507	5,916	1,898
Equals earnings of the operator household from farming activities	-3,419	40,623	7,906
Plus earnings of the operator household from off-farm sources ⁹	45,418	33,897	42,455
Equals average farm operator household income comparable to U.S. average household income, as measured by the CPS	41,999	74,519	50,361
	<i>Percent</i>		
Average farm operator household income as percent of U.S. average household income ¹⁰	89.1	158.1	106.9
Average operator household earnings from farming activities as percent of average operator household income ¹¹	-8.1	54.5	15.7

P = preliminary.

*=CV is between 25 and 50 percent. CV's less than 25 percent are unmarked. CV=(Standard Error/Estimate)*100.

¹This table derives farm operator household income estimates from the Agricultural Resource Management Study (ARMS) that are consistent with Current Population Survey (CPS) methodology. The CPS, conducted by the Census Bureau, is the source of official U.S. household income statistics. The CPS defines income to include any income received as cash. The CPS definition departs from a strictly cash concept by including depreciation as an expense that farm operators and other self-employed people subtract from gross receipts when reporting net cash income.

²A component of farm sector income. Excludes income of contractors and landlords as well as the income of farms organized as nonfamily corporations or cooperatives and farms run by a hired manager. Includes the income of farms organized as proprietorships, partnerships, and family corporations.

³Consistent with the CPS definition of self-employment income, reported depreciation expenses are subtracted from net cash income. The ARMS collects farm business depreciation used for tax purposes.

⁴Wages paid to the operator are subtracted here because they are not shared among other households that have claims on farm business income. These wages are added to the operator household's adjusted farm business income to obtain farm self-employment income.

⁵Gross rental income is subtracted here because net rental income from the farm operation is added below to income received by the household.

⁶More than one household may have a claim on the income of a farm business. On average, 1.1 households share the income of a farm business.

⁷Includes net rental income from the farm business. Also includes net rental income from farmland held by household members that is not part of the farm business.

⁸Wages paid to other operator household members by the farm business and net income from a farm business other than the one being surveyed. Also includes commodities provided to household members for farm work.

⁹Wages, salaries, net income from nonfarm businesses, interest, dividends, transfer payments, etc.

¹⁰U.S. average household income, as reported in the CPS, was \$47,123 in 1996.

¹¹Income from farming activities can be a negative percentage of total household income, if the operator household loses money farming.

Sources: U.S. Dept. of Agriculture, Economic Research Service, 1996 Agricultural Resource Management Study (ARMS), for farm operator household data. U.S. Dept. of Commerce, Bureau of the Census, Current Population Survey (CPS), for U.S. average household income.

Estimating Farm Operator Household Income

The Agricultural Resource Management Study (ARMS), conducted by ERS and the National Agricultural Statistics Service (NASS) provides the data necessary for estimating operator households' income in table 5 and appendix table 3. The ARMS is the successor to the Farm Costs and Returns Survey (FCRS) used in previous years. Estimates based on the ARMS differ from what would have occurred if a complete enumeration had been taken. However, the coefficient of variation (CV), a measure of sampling variability, is available from survey results. According to the guidelines for use of the ARMS, any estimate with a CV greater than 25 percent must be identified and used with care.

The operator of a farm is the person who makes most of the day-to-day decisions about the farm, regardless of whether others share management responsibility. The number of farm operators is the same as the number of farms. The number of farms for which the ARMS collects household income data, however, is slightly smaller than the total count of farms. The ARMS collects information about the operator household only if the farm is organized as an individual operation, a partnership, or a family corporation. The first five items in table 5 relate to the income and expenses of the whole farm business, regardless of how many households share the income of the farm. The remaining items relate only to income received by the operator household.

The Current Population Survey (CPS), conducted by the Bureau of the Census, is the source of official U.S. household income statistics. Thus, calculating an estimate of farm household income from the ARMS that is consistent with CPS methodology allows comparing income between farm operator households and all U.S. households. The CPS definition of farm self-employment income is net money income from the operation of a farm by a person on his or her own account. CPS self-employment income includes income received as cash, but excludes in-kind or nonmoney receipts. The CPS definition departs from a strictly cash concept by deducting depreciation, a noncash business expense, from the income of self-employed people.

Farm self-employment income from ARMS is the sum of the operator household's share of adjusted farm business income, wages paid to the operator, and net rental income from renting farmland (see table 5). Adding other farm-related earnings of the operator household yields earnings of the operator household from farming activities. Finally, total operator household income is calculated by adding earnings from off-farm sources.

U.S. Economy Continues To Support Farm Sector

Strong Growth in 1997 To Moderate in 1998

The strong estimated 3.8 percent GDP growth of 1997 is expected to slow to 2.5 percent in 1998. The strong growth in consumer spending, business equipment and inventory spending responsible for 1997's robust growth will moderate, slowing GDP growth. A wider trade deficit prompted by the slowdown of Asian growth and the strong dollar will also be a factor in tempering GDP growth. Reflecting the growth slowdown, the very fast job expansion seen in 1997 will greatly moderate in 1998. As the labor market remains tight, real wages rise by more in 1998 than in 1997. The higher wages and high capacity utilization rates will be only partly offset by low raw material price rises, causing the GDP deflator to move up from a very low 2.1 percent in 1997 to 2.3 percent in 1998. Interest rates, which fell in the second half of 1997, will rise modestly in 1998. The dollar is expected to strengthen modestly relative to other developed countries, and will remain strong relative to Asian currencies.

GDP growth is expected to reach 3.8 percent for 1997, led by very strong growth in consumer, business equipment and inventory spending. Consumer spending in 1997 was the strongest of any year during the current economic expansion, driven by strong gains in disposable income from a very tight labor market and record high levels of consumer confidence. The inventory buildup during 1997 is the strongest since 1984. Business equipment spending has been driven by strong profit growth, new technology, the need to economize on increasingly expensive and less available labor, and strong export growth.

In 1997 more jobs were added and real compensation rose more rapidly than in any previous year of the current economic expansion. The lack of qualified job seekers constrained job growth in late 1997. These hiring bottlenecks are expected to accentuate in 1998, as most analysts believe the economy is at full employment. The hiring bottlenecks will limit economic expansion, thereby slowing disposable income growth and consumer spending growth in 1998.

As growth in spending on consumer goods slows, the inventory buildup is expected to slow. Also, higher wages expected in 1998, due to the tight labor market, will cut into profit growth. The slowdown in Asia's growth and the strong dollar will reduce export growth. Slower profit and export growth in 1998 will be expected to limit business equipment spending. As a result, GDP growth is expected to slow in 1998 to 2.5 percent.

The slower expected growth in Asia and its overall negative impact on world growth, and the resultant increase in the

U.S. trade deficit account for about 30 percent of 1998's forecast slowdown in GDP from 1997's 3.8 percent.

Modestly Higher Inflation and Interest Rates Expected in 1998

Inflation was lower in 1997 than in 1996 despite a booming economy. The dollar was strong, raw material price pressure was largely absent, and energy prices fell sharply early in the year. Producer prices dropped for 7 straight months, leading to a likely annual rise of less than 0.5 percent for 1997. Despite growing real wages, consumer prices rose only 2.4 percent, down from 1996's modest 2.9 percent.

A modest increase in inflation is expected in 1998 due to continued very tight labor markets and the moderate upward movement in manufacturing capacity utilization since the spring of 1997. As energy prices are not expected to rise in 1998, wage increases will continue to be modest, so producer price inflation will be below 2.0 percent. Consumer prices will be up 2.6 percent, reflecting higher wage costs only being partly offset by productivity gains.

Many analysts believe general interest rates, such as interest rates on Treasury securities, will move 25 to 50 basis points higher in 1998, with most of the upward pressure on short-term interest rates. Among the factors that may push general interest rates higher are slightly higher inflation and continued strong growth in business credit demand to fund business fixed investment.

Farm and Rural Sector Borrowing Rates from Commercial Banks Are Likely To Move Only Slightly Higher in 1998

Increases in farm and rural lending rates will likely be smaller than potential increases in interest rates in the overall economy. Any increases in farm and rural lending rates from commercial banks will be held down by three main factors.

First, overall bank lending premiums on business loans relative to bank funds costs have continued to narrow in recent years. This downward movement in bank risk premiums for business lending comes from lower perceived default risk in bank lending to businesses, and record bank profits that have increased the desire of commercial banks to expand business lending. The trend toward lower bank lending spreads is expected to continue in 1998. In agricultural lending, the perceived risk in farm lending has been reduced by the strong growth in overall farm real estate values in 1997 and strong farm earnings in recent years.

Second, many banks heavily involved in agricultural and rural lending are relatively small rural banks. These smaller banks are heavily dependent upon consumer type deposits

that are not very sensitive to short-term movements in open market rates. Thus, most small bank deposit rates will be only slightly affected by any modest rises in market interest rates in 1998.

Third, commercial banks, especially smaller banks in relatively isolated areas, determine their lending rates in part based upon their average costs of funds. Using the average cost of bank funds to determine bank lending rates tends to smooth the lending rates, since time is required to "roll over" bank deposits. When used properly and in appropriate market conditions, pricing loans using the average cost of funds results in lower volatility for bank lending rates and bank profits. Farm operators have benefited from this interest rate stability, especially over the last several years.

Asia Situation Contributes to the Moderation Of Farm Sector Economic Performance

Slow Asian growth and a strengthening dollar against South Asian economies will likely affect farming and the rural economy more than the U.S. economy as a whole. The farm impact comes from three factors: (1) reduced growth in Asian demand for U.S. food exports, (2) reduced growth in demand for U.S. agricultural exports in other countries, as world growth slows because Asian growth slows, and (3) reduced growth in domestic demand for animal products as U.S. disposable income slows more than it would have otherwise.

The developing Southeast Asian economies, South Korea, and Japan have been growth markets for U.S. field crops, meats, and specialty products. U.S. exports will grow more slowly as the domestic price to Asian customers rises due to a strong dollar while income growth slows.

The near-term Asian growth slowdown has spilled over to non-Asian countries, slowing world growth and further curtailing U.S. farm exports to those countries.

Favorable Input Prices To Continue Easing Farm Expense Growth

The economy provided a very favorable environment for the modest growth in expenses seen in 1997. Outlays for manu-

factured inputs declined largely due to falling energy prices. Interest expenses grew less than 2 percent, largely due to rising debt, not higher interest rates. Other operating expenses, which are strongly influenced by wage costs, grew above the general inflation rate, reflecting real wage increases seen in most of the economy.

The expected drop in energy prices in 1998, moderate expected increases in other raw material prices, and a strong dollar will keep overall producer price increases modest. Farm expenses should reflect that general pattern. The nitrogen component of fertilizer prices, given the expected decline in natural gas prices, may actually decline. Wage-related inputs such as services and contract labor will likely see modest increases. As interest rate increases are expected to be small in 1998, non-farm input expense growth should be modest.

Slowdown in the Rural Economy To Cut Farm Household Income Growth

The Asian financial situation expected in 1998 will somewhat curtail the growth of the U.S. rural economy in 1998. The U.S. manufacturing sector will suffer from the strong dollar and the relatively high income elasticity of manufactured exports. Rural manufacturing tends to be competitive with many of the exports of South Asia. Because of the strengthened dollar against South Asian currencies, South Asian goods are cheaper in dollar terms and the competitive goods made in rural America are more expensive. Further, the sluggish income growth in Asia will slow growth in U.S. capital goods exports as well as consumer goods to that area. The sluggish world growth will exacerbate the slowing export growth of U.S. manufactured goods. As a result, rural manufactured export growth will slow in 1998. The good employment growth seen lately in rural America will be curtailed in 1998. The overall improvement in economic prospects for farm families will not be as bright as in 1997. [David Torgerson, dtorg@econ.ag.gov, 202-694-5334; Paul Sundell, psundell@econ.ag.gov, 202-694-5333]

Farm Assets, Debt, and Equity Continue Upward Through 1998

The value of U.S. farm business assets is expected to exceed \$1 trillion in 1997 and continue growing in 1998. The value of farm real estate, the largest share of the sector's assets, increased 5.9 percent during 1997 and is expected to grow 5 percent in 1998. Farm business debt is expected to grow more than 3 percent in both 1997 and 1998, much slower than the growth of farm business assets. The strong growth in farm assets and modest expansion in farm debt imply a rising net worth (equity) for the farm sector in 1997 and 1998 (fig. 11).

The total value of farm sector assets reached nearly \$ 1.1 trillion in 1997, up 4.6 percent from 1996, and is expected to grow another 4.5 percent by the end of 1998. Farm asset values have grown nearly 4 percent per year during the 1990s. The value of farm business assets represents a large amount of economic wealth, with 1997 farm asset values exceeding those of the Nation's largest three banks, and nearly equaling the combined market capitalization of the five non-banking corporations with the largest net worth.

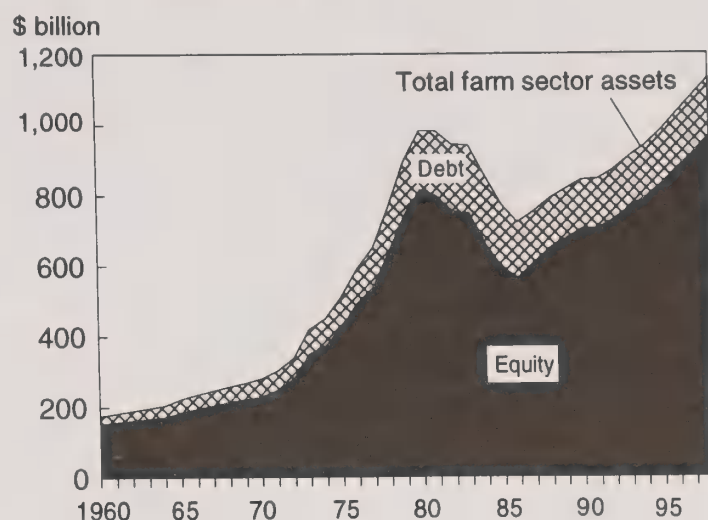
Farm business debt is projected to reach \$162 billion by the end of 1997, and to rise another 3 percent in 1998. Rising debt levels do not signal pending financial distress in the farm sector. Despite the increase in debt, farm business balance sheets have shown steady improvement throughout the 1990s, especially since 1992. Debt-to-asset ratios have improved, as the 16-percent increase in farm business debt during 1992 through 1997 has been more than offset by a 25-percent rise in the value of farm business assets. The value of farm real estate has risen a third from 1992 through the end of 1997, while farm mortgage balances have increased less than 12 percent. As a result, the degree of U.S. farmland leverage has declined substantially, providing most producers with an added equity cushion to lessen the impact of any short-term declines in income.

Nevertheless, sector-wide net cash income in 1997 is expected to be about 9 percent below its 1996 level. The impact of this decline will not be evenly distributed across all U.S. farm operations, and producers specializing in wheat, beef, and dairy will likely begin to feel additional financial stress in 1998. However, even these operations may be able to offset income losses by diversifying into other commodities.

Farm Real Estate Values Continue Rising

Continued strong farm income and returns to farm assets in 1997, although down slightly from 1996, provide the foundation for continued growth in farm real estate values in 1998. Several factors are key in understanding the short- and longer term outlook for farmland values: 1) the Federal Agriculture

Figure 11
Farm assets, debt, and equity
Equity increasing since 1986



Improvement and Reform Act of 1996 (1996 Act), which fundamentally redesigns income support programs by "decoupling" program payments from program participation, 2) deregulated and expanded markets for farm credit, and 3) increased globalization of the world economy. These factors have increased the variability of returns to farm investments, but have also created new opportunities for new capital investment in the sector.

Increased variability in net returns to farm assets under the new, more market-oriented 1996 Act could affect farmland values. This is because under "decoupling" more of the price and financial risk is transferred from the Federal Government to the individual producer. Also, future farmland prices will need to adjust to account for expected lower government payments. Both the additional risk assumed by producers and the reduction in revenue from government payments will be factored into what purchasers are prepared to pay for farmland in the future. However, the effects of nonagricultural factors such as urban pressure on farmland values could mitigate the expected downward direction of these adjustments.

Deregulated financial markets and sweeping changes in the United States and world capital markets are also increasing the mobility of capital and farm sector liquidity. Although this has generally led to easier access to credit at more favorable terms, it (like "decoupling") is causing farmers and farm investors to assume more of the financial and price risk previously assumed by the government.

U.S. agriculture, like the economy in general, has become high-tech and increasingly export-driven. Financial markets

have become increasingly efficient and global. Connected through computer and other information technology, farm investors now have ready access to financial and commodity price data worldwide. Lowering of tariff and non-tariff barriers under NAFTA (North American Free Trade Act) and GATT (General Agreement on Tariffs and Trade, superseded by the World Trade Organization, WTO), have helped provide new export markets for U.S. agriculture. Furthermore, the “decoupling” of farm commodity prices under the 1996 Act has helped U.S. agricultural products become more competitively priced in world markets.

Long-term expectations for reasonably robust — although variable — farm income, stable interest rates and sufficient

access to credit markets, along with the outlook for agricultural exports, are key factors supporting strong demand for farmland, machinery and equipment, and other farm assets.

Continued demand for agricultural land along the fringes of urban areas and demand for rural land for recreational purposes are also contributing to the growth in real estate values, especially in the Northeast and in some Western States. Nonreal estate asset values are expected to increase about \$3.4 billion (1.5 percent) in 1998. The value of machinery and equipment, crops stored, purchased inputs, and financial assets are all expected to rise slightly. However, livestock and poultry inventories are expected to decline slightly.

Farm Debt Rise Anticipated To Continue Through 1998

Farm debt is expected to rise over 3 percent in 1998, after increasing nearly 4.0 percent in 1997. Commercial banks' share of total farm debt is projected to rise in both 1997 and 1998. Net cash income, lower relative to 1996's record level, and higher debt will translate into a rise in farmer use of debt repayment capacity to 55 percent in 1997 and 57 percent in 1998, up from 49 percent in 1996.

Farm business debt is anticipated to approach \$168 billion by the end of 1998, its highest level since 1985. The expected increase of over \$5 billion during 1998 will mark the sixth consecutive year of rising farm debt. The expansion in outstanding loan balances in 1998 follows a projected debt increase of almost \$6 billion in 1997.

While the rate of growth in debt is expected to fall slightly in 1998 from 1997's nearly 4-percent rate, these years are expected to produce a continuation of the steady growth of indebtedness that began in 1993. Annual increases during 1994-97 are the largest since 1982.

Total interest expenses are anticipated to increase only slightly in 1998, as a continuing favorable interest rate environment is expected to lessen the impact of growing indebtedness. However, it appears that a larger number of operators will have less income available to meet principal and interest payments on their loans in 1997, and those experiencing the greatest reduction in income may experience additional difficulty in meeting their debt service requirements in 1998.

Strategic use of credit provides a valuable source of capital that can lead to improved productivity and higher profits. The 1996 Act allows farmers greater flexibility in determining the combination of commodities to produce to maximize profit on their individual operations. The recent rise in loan balances can be at least partially attributed to farmers' positive view of the future of the sector, given its assumed comparative advantage in liberalized global markets. Strong farmland markets of the last few years also attest to farmers' long-term confidence. While many farmers have financed expansions with cash purchases of adjacent properties, farm mortgage debt levels are expected to rise almost 3 percent in both 1997 and 1998.

Total nonreal estate debt is anticipated to rise about 4 percent in 1998, slightly less than in 1996 and 1997. The number of tractors purchased, projected to decline slightly in 1997 from 1996, is expected to be relatively stable in 1998. Farmers appear to be willing to borrow to invest in replacement of their capital stock. Availability and ease of obtaining credit, coupled with generally favorable interest rates, are likely to maintain farmers' demand for machinery in 1998.

Debt Growth Rate Still Moderate by Historical Standards

The recent increases are relatively small compared with annual debt changes during the 1970s, when outstanding loan balances grew at an average annual rate of over 12 percent (fig. 12). The rapid growth in use of debt financing during that period is an often cited cause of the farm financial crisis that emerged in the mid-1980s.

Expanded use of credit caused total farm business debt to increase from less than \$50 billion in 1970 to a high of almost \$194 billion in 1984. Debt levels declined during the subsequent financial crisis, falling to \$137 billion by the end of 1989. Yearend loan balances remained within the \$137-\$139 billion range from 1989 through 1992, trending slowly upward at an average annual rate of less than 1 percent. Farmers appear to have used relatively high incomes generated during 1989-92 to minimize borrowing and improve their balance sheets.

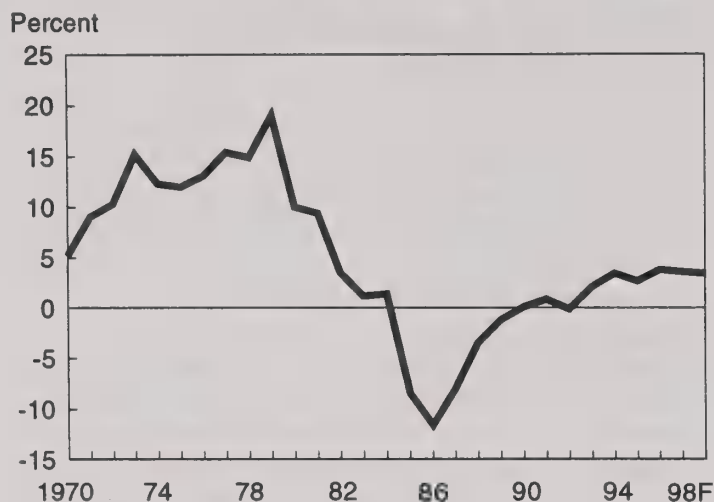
The debt growth rate began a modest acceleration after 1992, rising to almost 2 percent in 1993. The rate of increase in total farm business debt has averaged over 3 percent during 1994-1997. Debt levels at yearend 1998 are expected to stand about \$25 billion above those of 1992, a rise of over 17 percent. However, yearend 1998 debt is expected to stand about \$29 billion below its 1984 peak.

Farmers' Use of Repayment Capacity To Rise In 1998

Farmers are expected to use their available credit lines more fully in 1998. Lenders generally require that no more than 80 percent of a loan applicant's available income be used for repayment of principal and interest on loans. For farm operators, this income available for debt service (measured as net cash income plus interest) can be used to determine the maximum loan payment the farmer could make. Given current market interest rates and an established repayment period, the maximum debt that the farmer could carry with this loan payment can be determined. Using current bank interest rates and a 7-year repayment period, maximum feasible debt conceptually measures the line of credit that could be available to farmers.

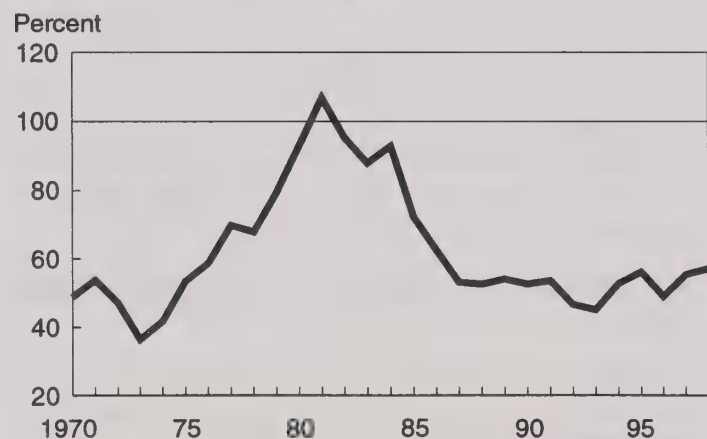
Farm debt repayment capacity use (actual debt expressed as a percentage of maximum feasible debt) effectively measures the extent to which farmers are using their available lines of credit. This ratio indicates that, in 1998, farmers are expected to use over 57 percent of the debt that could be supported by their current incomes (fig. 13). Use of debt repayment capacity rose from 45 percent in 1993 to 56 percent in 1995. Despite the 1996 rise in farm business debt, high net cash income and lower interest rates led to a drop

Figure 12

Year-to-year to changes in farm debt

Forecast for 1997 and 1998.

Figure 13

Utilization of debt repayment capacity expected to be higher in 1997 and 1998

Actual debt compared with a hypothetical maximum debt that could be carried based upon repayment capacity.

in use of debt repayment capacity to 49 percent. Effects of expected favorable interest rates throughout 1997 and 1998 will not be sufficient to offset the combined effects of rising debt and lower net cash income, as reflected in rising use of debt repayment capacity to 55 percent in 1997 and an expected 57 percent in 1998.

Farm Credit System Debt Rise Slows

Farm business debt owed to the Farm Credit System (FCS) is forecast to increase about 3 percent in 1998, following increases of almost 4 percent in 1997 and 6.5 percent in 1996. FCS mortgage debt is projected to rise less than 2 percent in both 1997 and 1998. These increases add to a 1996 gain of 3.5 percent, which was the first significant FCS gain in over a decade. System real estate debt increased from less than \$20 billion at the end of 1977 to more than \$46 billion by yearend 1984. FCS experienced substantial loan losses and borrower flight during the mid-1980's, and farm mortgage debt subsequently

fell to \$25 billion by 1992. As commercial banks gained real estate lending market share, FCS farm mortgage debt stagnated at the \$25 billion level. Projections for 1998 indicate that yearend FCS farm mortgage debt will approach \$27 billion for the first time since 1989.

Preliminary projections indicate that FCS nonreal estate loans will increase over 5 percent in 1998, following gains of 7.5 percent in 1997 and 12 percent in both 1995 and 1996. FCS nonreal estate debt experienced a surge and decline similar to that of mortgage lending, as it rose from about \$13 billion in 1977 to over \$21 billion in 1981, then fell to less than \$9 billion in 1988. FCS nonreal estate debt is projected at almost \$16 billion by the end of 1998.

During the period of relatively slow growth in loan volume prior to 1995, FCS institutions streamlined through mergers and profited from improved net interest margins. FCS' share of the farm business debt market appears to have now stabilized at about 25 percent. FCS institutions currently appear to be well positioned to be a stable, competitive force in farm credit markets in the future.

Banks' Growth in Farm Loans on the Rise Again

Farm debt held by banks is expected to increase about 4 percent in 1998, following a similar rise in 1997. Bank debt rose 51 percent (almost \$22 billion) during 1988-1997. Farmers appeared to apply a portion of the high 1996 cash incomes to reduce existing bank debt, which increased about \$1.8 billion (about 3 percent) that year. The growth in bank lending, which is projected to accelerate to about 4 percent in both 1997 and 1998, will likely generate an increase in bank debt of about \$2.5 billion in each year. Nonreal estate farm loan balances are projected to rise less than 3 percent in 1998, while loans secured by farmland are expected to increase almost 6 percent.

Agricultural banks enter 1998 well capitalized and report ample funds to meet the credit needs of qualified borrowers. Through midyear 1997, agricultural banks reported a slight decrease in both delinquencies and charge-offs of nonreal estate debt. These decreases reflect improved farm incomes during 1996, which helped hold both bank nonreal estate delinquencies and charge-offs to less than one-third of their 1989 levels. Charge-offs may rise during 1998, as banks now move to quickly resolve problem loans. Otherwise, banks are reporting consistent earnings and are well capitalized to deal with borrower difficulties.

Bank officers responding to surveys conducted by various Federal Reserve Banks indicate that problems may be building in the area served by the Minneapolis Federal Reserve District, where bankers report lower loan repayment rates and higher numbers of renewals and extensions. Changes in these measures also suggest slight worsening of financial conditions in States in the Chicago district, and an improve-

ment in States in the Kansas City and Dallas districts. However, bankers in most areas also report that demand for loans and fund availability are generally strong. These factors, and the current projections that for 1997 and 1998 net income will be about 10 percent below 1996 levels, suggest that some farmers may begin to experience repayment difficulties in 1998.

Banks report a continuing rise in loan-to-deposit ratios, which averaged 0.696 at mid-1997. This measure, up from 0.55 during 1990-92, has reached its highest level since the early 1980s. The rising loan balances and high loan-to-

deposit ratios in some Midwestern banks have been offered as evidence of a likely tightening of credit in the near future. However, these factors also indicate the recent strength of both farmers' loan demand and bankers' willingness to provide credit. Further increases in the loan-to-deposit ratios might lead to reduced farm credit availability, as some banks reserve their more restricted supply of loanable funds to their most credit-worthy borrowers.

Table 6 --Farm debt, December 31, selected years, 1984-97F.

Lender	1984	1988	1992	1996	1997F	1998F
	---Million dollars---			---Billion dollars---		
Real estate	106,697	77,833	75,421	81,724	84	86
Farm Credit System	46,596	28,445	25,408	25,725	26	27
Farm Service Agency 1/	9,523	8,980	6,394	4,654	4	4
Life insurance companies	11,891	9,039	8,765	9,469	10	10
Commercial banks	9,626	14,434	18,757	23,394	25	26
CCC storage facility	623	21	2	*	"	"
Individuals & others	28,438	16,914	16,095	18,481	19	19
Nonreal estate	87,091	61,734	63,613	74,799	78	81
Commercial banks	37,619	28,309	32,912	38,475	40	41
Farm Credit System	18,092	8,766	10,346	14,015	15	16
Farm Service Agency 1/	13,740	12,899	7,143	4,865	5	4
Individuals & others	17,640	11,760	13,230	17,444	19	20
Total debt	193,788	139,567	139,052	156,523	162	168
Farm Credit System	64,688	37,211	35,753	39,740	41	43
Farm Service Agency 1/	23,263	21,879	13,538	9,519	9	8
Commercial banks	47,245	42,742	51,669	61,869	64	67
Life insurance companies	11,891	9,039	8,765	9,469	10	10
Individuals & others	46,701	28,694	29,327	35,925	38	40

Farm business debt outstanding as of December 31. * = Less than \$500,000.

1/ Formerly Farmers Home Administration.

F = Forecast.

Farm Financial Ratios Favorable

Farm Sector Equity Continues Upward

Farm business equity is expected to continue rising in 1998 as farm asset values rise more rapidly than farm debt. In today's dollars, \$1.132 trillion in assets minus \$168 billion in farm debt yields a sector net worth of nearly \$964 billion. Farm sector equity by the end of 1998 is expected to be almost \$90 billion more than in 1996, and over \$300 billion greater than in 1985.

The long-term farm equity comparison is a little different if the numbers are adjusted for inflation. Dividing the nominal value of farm equity by the 1992 GDP price deflator (chain-weighted), an index of inflation, yields an estimate of "real" farm equity in constant 1992 dollars. Real farm equity in 1998 is forecast to be \$852.9 billion. In 1986, farm equity had an inflation-adjusted value of \$705 billion compared to an estimated peak of almost \$1.4 trillion in 1980. Consequently, projected farm sector wealth in 1998 is still \$499 billion below the inflation-adjusted value of farm equity in 1980.

Debt-to-Asset Ratio Continues Downward Trend

Indicators used to measure the solvency of the farm sector remain favorable for 1997 and 1998. The debt-to-asset ratio indicates the relative dependence of farm businesses on debt and their ability to use additional credit without impairing their risk-bearing ability. The lower the debt-to-asset ratio, the greater the overall financial solvency of the farm sector. The debt-to-asset ratio is forecast to be 14.8 percent in 1998, compared with 15.0 percent expected in 1997. The share of debt to total asset value has declined steadily in the 1990s, from 16.5 percent in 1991 to 15.3 percent in 1995, and stands in sharp contrast to 1985 when it was 23 percent. The debt-to-equity ratio is forecast to be 17.4 percent in 1998, compared with 17.6 percent in 1997, and down from 17.8 in 1996.

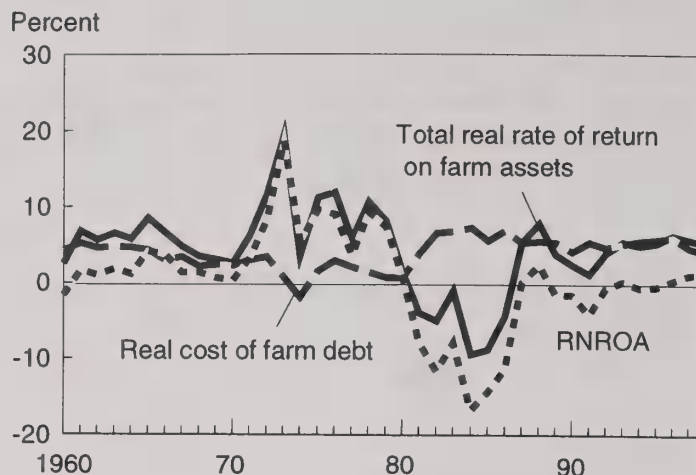
Profitability of Farm Sector Investments Rising

Rates of return on farm assets and equity in 1997, indicators of the profitability of farm sector investments, will likely be higher than other years in the 1990s with the exception of 1996. Total returns on farm business assets (including capital gains) are estimated at 5.7 percent in 1997 (with 3.7 percent growth in current income and 2.0 percent growth in capital gains). However, lower farm income and a continued rise in farm sector asset and equity values suggest slightly lower rates of return on farm assets and equity in 1998. Total returns on farm business assets are forecast at 5.2 percent in 1998, reflecting both the lower expected returns to farm assets and somewhat slower appreciation in farm asset values (fig. 14).

The real net return on farm assets (RNROA) turned positive in 1996 (0.3 percent) and is forecast to rise to 1.1 percent in

Figure 14

RNROA, total real rate of return on farm assets, and real cost of farm debt



1997 and 1998 are forecasts.

1997 and 1.2 percent in 1998 (fig. 14). This indicates that debt financing is becoming more profitable for the farm business sector. Correspondingly, farm business capital expenditures are forecast to remain in the \$17 to 18 billion range, up from \$13 to \$14 billion in 1994-95.

The real net return on farm assets has varied widely during 1960-96 (fig. 14). The real capital gains and losses experienced by owners of farmland have overshadowed current income in determining the total return on farm assets (figs. 15-16). Changes in returns to farm assets generate the big swings in farm asset values and the resulting capital gains and losses in the farm sector. Relatively small changes in returns can generate large capital gains and losses (fig. 16).

Real capital gains arise in two ways. First, changes in current returns, growth rate of returns, and the discount rate cause changes in farm asset prices and corresponding capital gains and losses. Second, if the growth rate of current income is positive, asset prices will rise even if the growth rate of returns and the discount rate are unchanged.

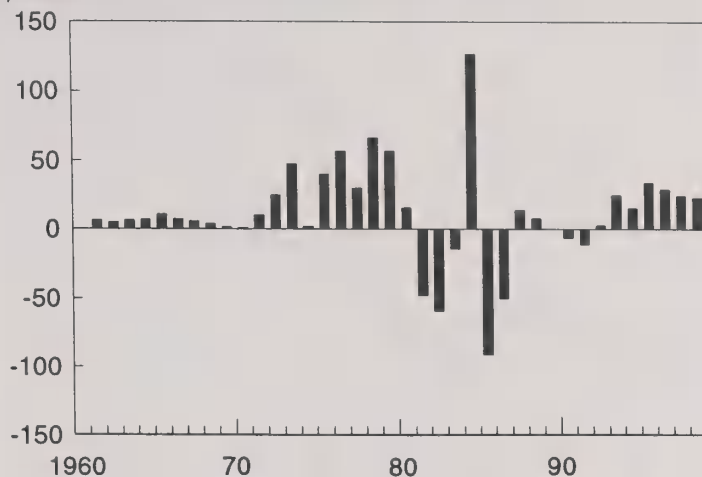
At the U.S. level, the real net return on assets (RNROA) averaged about 7 percent in the 1970s, reaching 19.9 percent in 1973. This is largely due to the large real capital gains accrued on farm business assets. The (average) real cost of farm debt or cost of borrowing for the U.S. farm sector was negative in 1974, as the general inflation rate was greater than the (nominal) interest rate on farm debt. Since the RNROA was positive during the 1970s, debt financing was profitable for the farm business sector as a whole (fig. 14).

However, in 1980 the situation changed dramatically. The real capital gains on farm business assets became real capital losses as farm asset and equity values adjusted to the

Figure 15

Real capital gains on farm business equity

\$ billion

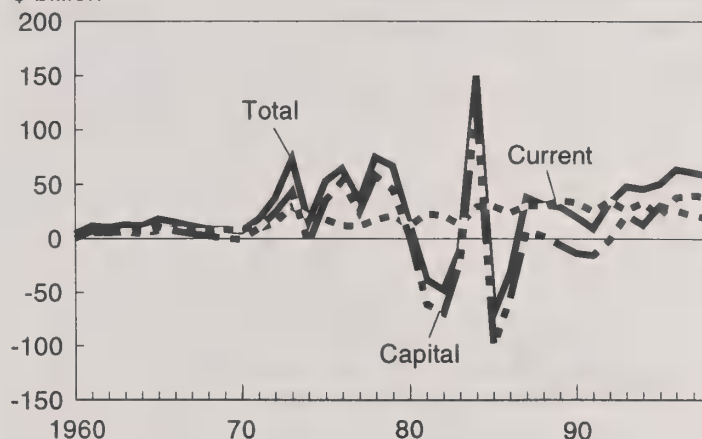


1997 and 1998 are forecasts.

Figure 16

Total returns to U.S. farm assets from current income and real capital gains

\$ billion



1997 and 1998 are forecasts.

lower expected growth in farm income. Debt financing was unprofitable for the farm sector during 1980-86. Although returns to farm assets from current income recovered somewhat from dips in 1980 and 1983, the RNROA for farms overall was negative during 1981-95, except for 1987-88 and 1993. (fig. 14)

The increase in the real net return on farm assets since 1996 is primarily due to lower real (inflation-adjusted) costs of borrowing (nominal interest rates are low, as is the overall rate of inflation). Although the lower real cost of debt (borrowing) provides an incentive to increase borrowing, the increased total real return of owning farm assets such as farmland and farm machinery and equipment is the main impetus.

Measures of Farm Sector Profitability

Real capital gains (losses) mean "adjusting the nominal capital gains for inflation in that year." Yearly inflation changes the purchasing power of funds tied up in assets (or debt). The real net returns on farm assets and equity are estimated as follows:

For farm assets:

ROACI (rate of return on assets from current income)

+ ROARKG (rate of return on assets from real capital gains)

= ROATOT (total real rate of return on farm assets)

- RELCSTDT (real cost of farm debt which is the average interest rate on farm debt minus the real rate of return on farm debt)

= RNROA (real net return on assets) or expressed slightly differently

$$\text{RNROA} = (\text{current income} + \text{real capital gains on assets}) / \text{total farm assets} - (\text{interest} + \text{real capital gains on debt}) / \text{total farm debt}$$

For farm equity:

ROECI (rate of return on farm equity from current income)

+ ROERKG (rate of return on farm equity from real capital gains)

= ROETOT (total real return on equity)

Other Key Financial Ratios Continue To Improve

Net cash flow provides an indication of the total resources available to farm businesses for investment in the farm sector, and to meet current debt obligations. Net cash flow expands upon net cash income by accounting for both internal and external sources of funds. The ratio of debt to net cash flow rose from 2.6 in 1996 to 2.9 in 1997. Debt to net cash flow is forecast to remain at 2.9 in 1998. During the 1990s, debt to net cash flow has fluctuated within a narrow range of 2.3 to 3.0. From 1980 to 1985 the ratio ranged from 4.4 to 5.9 (fig. 17).

The debt/returns to farm assets ratio rose to 9.1 in 1995 as farm debt and returns to operators fell sharply. However, the ratio fell to 4.1 in 1997 and is forecast to rise to 4.4 in 1998. This means there is \$4.60 of farm debt per \$1 of returns in 1998, compared to \$3.90 in 1997. Conversely, there are fewer dollars of returns to meet farm debt obligations in 1998 than in 1997. On average, the profitability of farm sector investments (including capital gains) is expected to be slightly lower in 1998 than in 1997 (fig. 18).

Net cash flow (after interest expenses) is defined as:

Net cash income

+ change in farm business debt

+ net change in other financial assets

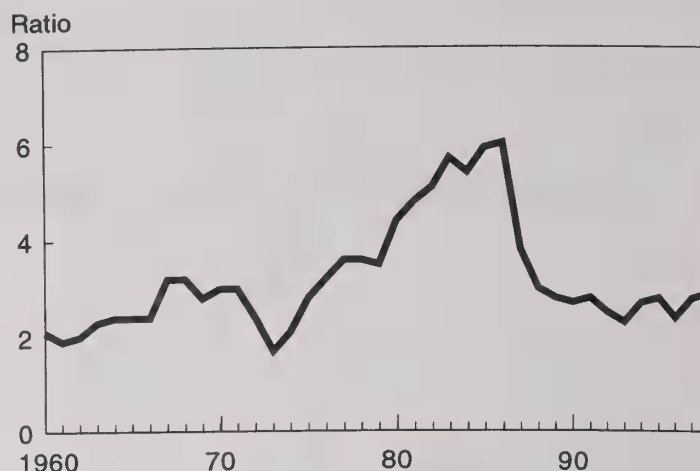
+ net rent to nonoperator landlords (excluding capital consumption)

- capital expenditures (excluding operator dwellings)

Figure 17

Debt-to-net cash flow

Debt-to-net cash flow reasonably stable in 1990's

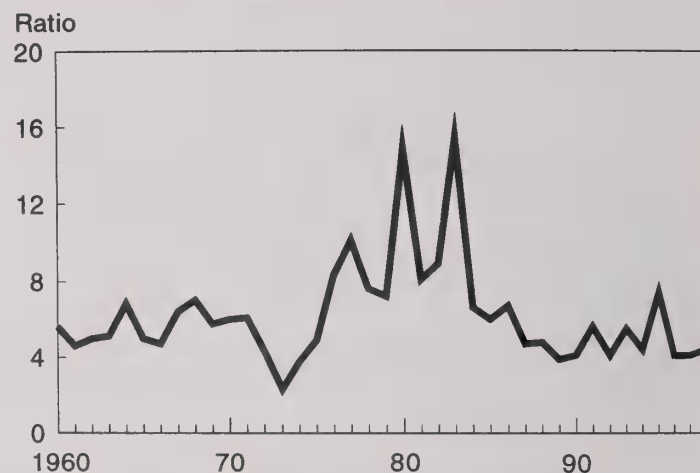


1997 and 1998 are forecasts.

Figure 18

Debt/returns to farm assets

Returns strong compared with debt in 1997-1998



1997 and 1998 are forecasts.

Financial Performance of U.S. Farm Businesses, 1996: Results from USDA's Agricultural Resource Management Study

The financial condition of U.S. farm businesses as reported by farmers in the Agricultural Resource Management Study (ARMS) reflects last year's favorable weather and healthy global market for U.S. commodities. (For a description of the data see "Estimating Farm Operator Household Income", page 18.) Only one in five farms ended 1996 losing money on their business, the lowest rate since 1992. Cash grain producers had near-record production coupled with unusually high prices that generated the highest net income in over a decade. Many livestock producers also reported higher earnings after successive years of depressed prices from excess supply. Farmers reported gains in real estate values that led to continued growth in farm asset values, while debt increased at a manageable rate. Continued improvement in farm business balance sheets and generally higher incomes resulted in the fewest number of businesses in a vulnerable position since 1992.

Background

Commercial farms (those operations with \$50,000 or more of gross farm sales) represent less than 30 percent of all farms in the United States, yet they account for the majority of economic activity in the farm sector. Even though most businesses are financially sound, each year there are pockets of financial stress. This discussion highlights the diversity of financial circumstances that exist for commercial farms. The analysis is based on financial statements prepared from data reported by farmers in the ARMS. Farmers reported income data from the 1996 calendar year. Balance sheets are constructed with a December 31, 1996, reference date.

Financial statements are prepared to incorporate the recommendations of the Farm Financial Standards Council.

Overall Financial Performance

On January 1, 1997, USDA classified 4.1 percent of commercial farm businesses in a vulnerable financial position based on their combined net farm income and debt/asset ratios (see box). The share of vulnerable farms was down from 7.8 percent a year ago and represents one of the lowest percentages since 1992 (figure 19). At the other extreme, two out of every three farm businesses (67.9 percent) were considered to be in a favorable financial position. This represents the second highest percentage of financially favorable farm businesses since these types of estimates were first generated in 1986, and is exceeded only by the 68.9 percent estimated for 1992. These profitable, low-leveraged operations entered 1997 with sufficient funds to take advantage of investment and expansion opportunities.

All economic size classes improved financial performance in 1996 relative to 1995 with both an increase in the proportion of farms classified in a favorable financial position and a reduction

The Economic Research Service measures the overall financial performance of farms by combining a farm's net farm income and solvency position. Farms in a vulnerable financial position have debts in excess of 40 percent of the value of their assets and negative farm income. Farms in a favorable position have debts less than 40 percent of their assets and positive net farm income. Marginal solvency refers to positive income, high-debt farms, while marginal refers to negative income, low-debt farms.

in the percentage of vulnerable farms. There was, however, considerable variation among regions.

Some areas of the country had their best overall financial performance in over a decade. The Corn Belt led all regions with 77.8 percent of farm businesses classified in a favorable financial position. Other regions with a significant improvement in overall financial performance of farm businesses included the Lake States, Northern Plains, and Pacific.

Financial performance of commercial farms in the Appalachian, Southeast, and Northeast regions deteriorated in 1996. In the Appalachian region the number of farms considered to be in a favorable financial position fell to 61.7 percent, eight percentage points below 1995 and one of the lowest levels since the late 1980s. Appalachia was also the only region that had an increase in the percent of vulnerable farms in 1996.

When viewed in terms of production specialties, 1996 was an outstanding year for farms that specialized in the production of corn, wheat, and soybeans. Nearly four out of five farms that earned more than 50 percent of income from corn and wheat in 1996 were in a favorable financial position. Soybean commercial farms were not far behind with more than 70 percent classified in a favorable financial position. Each of these production specialties had only 3 percent of farms considered financially vulnerable in 1996.

Even though several production specialties had a reduction in the percent of farms classified in a favorable financial position, the proportion experiencing extreme financial difficulties remained relatively low. Poultry farms not only had the lowest share of farms in a favorable financial position (47.3 percent) in 1996, but experienced one of the lowest percentages of favorable farms since the mid-1980s. Tobacco and vegetable farms also had the lowest percentage of favorable farms in over a decade at 61.6 and 57.4 percent, respectively. The share of favorable fruit and tree nuts farms

Figure 19

Distribution of farms with gross sales of \$50,000 or more by overall financial performance

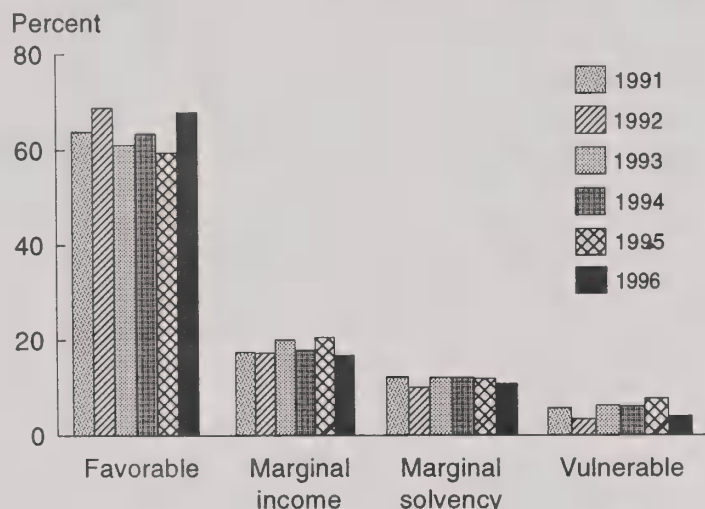


Figure 20

Distribution of commercial farms in the Corn Belt region by overall financial performance

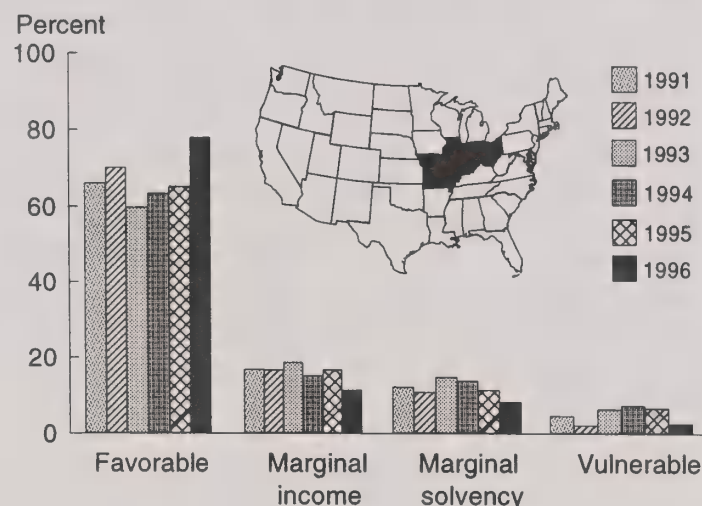


Figure 21

Distribution of commercial farms in the Appalachia region by overall financial performance

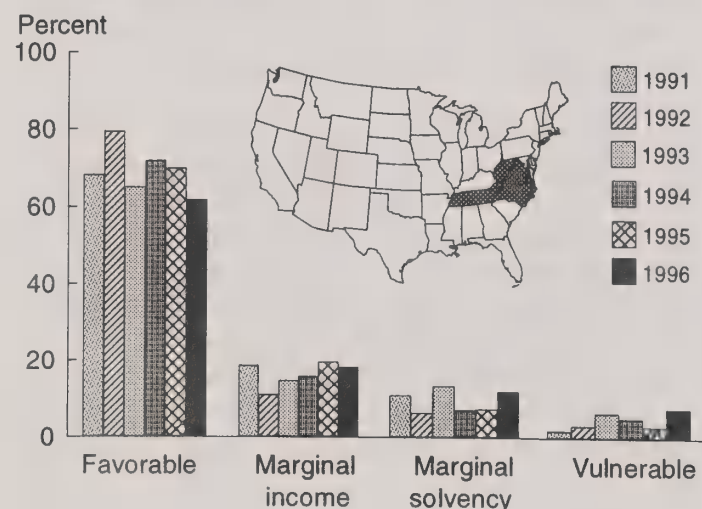
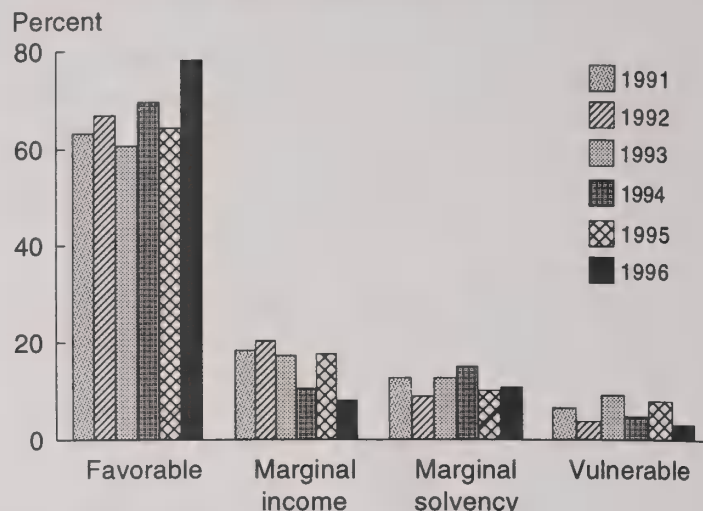


Figure 22

Distribution of commercial corn farms by overall financial performance



fell from 62.7 percent in 1995 to 56.8 percent in 1996, which was the lowest since 1993.

Farm Business Income

Net farm income, the most comprehensive measure of farm business earnings, averaged \$55,231 in 1996. This was a substantial increase from 1995's average of \$38,795 and one of the highest levels ever reported by farmers for commercial farm businesses. Net cash income also reached a historic high in 1996. On average, commercial farm businesses added over \$10,000 to 1995's \$52,832 net cash income. Average gross cash income, propelled by a \$24,000 increase in crop sales, increased 8 percent from 1995. Direct government payments averaged \$8,701, a slight increase from 1995, but consistent with levels observed during most of the 1990s. Cash operating expenses increased only 4 percent from 1995. Expense components associated with crop production, such as seeds (22 percent), and fertilizer and chemicals (17 percent), had the largest increases.

There was a notable shift in the distribution of commercial farms by net farm income categories in 1996 with nearly 80 percent of businesses having positive net farm income. This represents the lowest proportion of farms with negative net farm income since 1992. Not only were more farms profitable in 1996, the share earning the largest profits (\$40,000 or more) reached 42 percent, the highest percentage of the 1990s.

Farm Business Balance Sheet

The average value of assets for commercial farm businesses was \$909,095 in 1996, up 12 percent from 1995. Average farm business debt reached its highest level since the late 1980s at \$154,752. The increase in debt was not enough to offset rising asset values, leaving the average debt/asset ratio at 0.17, similar to the previous 5-year average. Most of the

increase in average total assets is attributable to rising real estate values. Land and buildings represented 60 percent of total assets and rose an average of 15 percent from 1995. The increase in debt came from real estate financing which accounted for nearly half of total farm business liabilities.

The majority (85 percent) of commercial farm businesses entered 1997 with a debt/asset ratio below 0.40 indicating a small potential for cash flow problems from debt commitment and relatively little risk of insolvency. Many farms

took advantage of the favorable financial conditions in 1996 to pay off or pay down existing debt as evidenced by the decline in the share of farms with debt/asset ratios above 0.40. Only 4 percent of farm businesses faced the risk of insolvency, having a debt/asset ratio above 0.70. The number of highly leveraged farms was consistent with levels observed during the previous 5 years and remains well below the mid-1980s when more than 10 percent of farms were in this position.

Table 7 - - Farm operation balance sheet for farms with gross sales of \$50,000 or more, average per farm, 1991-96

	1991	1992	1993	1994	1995	1996
	Dollars					
Farm assets	746,940	753,187	783,817	766,045	809,641	909,095
Current assets	131,322	132,497	126,434	137,442	151,975	155,103
Livestock inventory	30,054	29,900	30,001	28,850	28,356	30,401
Crop inventory	33,609	30,680	34,324	36,291	47,936	48,769
Purchased inputs	4,159	5,832	6,450	7,891	5,659	7,606
Cash invested in growing crops	0	4,579	4,093	5,290	5,293	5,783
Prepaid insurance	1,108	1,060	1,207	1,279	1,371	1,561
Other assets 1/	62,392	60,445	50,359	57,840	63,360	60,982
Non-current assets	615,617	620,690	657,384	628,603	657,666	753,992
Investment in cooperatives	3,751	4,184	4,402	5,539	3,825	6,425
Land and buildings 2/	467,393	457,338	490,675	452,372	483,958	557,639
Operators dwelling	46,312	47,007	48,177	48,595	47,465	53,215
Farm equipment	106,787	112,786	119,147	124,698	126,912	148,733
Breeding animals	37,687	46,383	43,160	45,993	42,971	41,195
Farm liabilities	126,039	113,992	144,413	138,279	148,067	154,752
Current liabilities	47,311	40,593	53,140	48,138	59,131	59,390
Notes payable within one year	29,833	23,717	32,497	26,398	37,437	36,972
Current portion of term debt	9,918	9,496	11,666	13,060	12,332	12,751
Accrued interest	3,554	3,198	4,063	3,888	4,161	4,353
Accounts payable	4,006	4,181	4,915	4,791	5,201	5,315
Non-current liabilities	78,728	73,399	91,272	90,141	88,936	95,362
Nonreal estate	14,158	14,226	17,105	23,222	20,636	20,183
Real estate	64,570	59,173	74,168	66,919	68,300	75,178
Farm equity	620,901	639,196	639,404	627,766	661,574	754,343
Debt/asset ratio	0.17	0.15	0.18	0.18	0.18	0.17

1/ Includes accounts receivable, certificates of deposit, checking and savings balances, and any other financial assets of the farm business.

2/ The value of the operator's dwelling and any associated liabilities were included if the dwelling was owned by the farm business.

Table 8 – Farm operation income statement for farms with gross sales of \$50,000 or more, average per farm, 1991-96

	1991	1992	1993	1994	1995	1996
	Dollars					
Gross cash income	199,022	199,418	226,096	222,701	247,697	266,523
Livestock sales	82,565	86,565	97,908	90,562	97,833	92,240
Crop sales (incl. net CCC loans)	92,167	89,223	92,192	102,520	116,041	140,221
Government payments	8,527	8,849	14,464	8,879	7,424	8,701
Other farm-related income 1/	15,762	14,781	21,532	20,740	26,400	25,361
Less: Cash expenses	155,476	150,041	179,848	175,667	194,866	202,869
Variable	123,545	119,215	144,910	141,532	156,276	162,358
Livestock purchases	13,768	12,510	19,007	13,723	14,411	12,416
Feed	20,046	20,771	25,947	25,645	28,652	27,573
Other livestock-related 2/	3,204	3,982	4,487	4,992	4,364	4,191
Seed and plants	7,129	6,870	7,823	8,279	8,571	10,427
Fertilizer and chemicals	20,715	20,616	22,409	23,790	26,802	31,351
Labor	21,978	19,829	25,365	23,627	29,128	28,492
Fuels and oils	7,762	7,491	7,979	7,889	7,983	9,083
Repairs and maintenance	10,890	10,739	12,673	11,880	12,749	14,738
Machine-hire and custom work	4,251	5,061	5,653	6,404	6,680	6,867
Utilities	5,838	5,080	6,072	5,882	6,053	6,819
Other variable expenses 3/	7,963	6,267	7,495	9,421	10,883	10,400
Fixed	31,931	30,825	34,938	34,135	38,590	40,510
Real estate and property taxes	3,423	3,673	3,777	3,923	4,077	4,436
Interest	13,295	11,879	12,403	11,883	14,079	14,510
Insurance premiums	4,431	4,241	4,827	5,118	5,483	6,245
Rent and lease payments	10,782	11,032	13,931	13,212	14,950	15,320
Equals: Net cash farm income	43,546	49,377	46,248	47,034	52,832	63,682
Less:						
Depreciation	15,501	15,916	18,441	19,820	21,421	22,473
Labor, non-cash benefits	798	785	687	633	910	751
Plus:						
Value of inventory change	5,709	7,428	6,281	7,218	3,785	9,777
Nonmoney income 4/	4,513	4,497	4,595	4,486	4,509	5,023
Equals: Net farm income	37,469	44,601	37,997	38,284	38,795	55,231

1/ Includes income from machine-hire, custom work, livestock grazing, land rental, contract production fees, outdoor recreation, and any other farm-related source. 2/ Includes livestock leasing, custom feed processing, bedding, and grazing. 3/ Includes supplies, registration fees, transportation, storage, and general business expenses. 4/ Defined as home consumption and imputed rental value of farm dwellings owned by the farm operation.

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Appendix table 1 --Value added to the national economy by the agricultural sector via the production of goods and services, 1993-98F

Item	1993	1994	1995	1996	1997F	1998F
Billion dollars						
Final crop output (sales)	82.0	100.3	96.7	113.5	110.6	108.0
Food grains	8.2	9.5	10.4	11.5	10.6	10.2
Feed crops	20.2	20.4	24.3	28.1	25.4	25.1
Cotton	5.2	6.7	6.9	7.5	7.0	6.7
Oil crops	13.2	14.7	15.5	17.8	19.8	19.2
Tobacco	2.9	2.7	2.5	2.8	2.9	2.9
Fruits and tree nuts	10.3	10.3	11.1	11.7	11.4	10.8
Vegetables	13.4	13.9	14.9	14.3	14.6	15.0
All other crops	14.0	14.9	15.2	15.7	16.4	16.5
Home consumption	0.1	0.1	0.1	0.1	0.1	0.1
Value of inventory adjustment 2/	(5.6)	7.1	(4.1)	4.0	2.5	1.5
Final animal output (sales)	91.7	89.7	87.6	92.0	91.9	93.6
Meat animals	50.8	46.8	44.8	44.4	46.6	47.9
Dairy products	19.2	19.9	19.9	22.8	21.0	20.7
Poultry & eggs	17.3	18.4	19.1	22.3	21.8	22.7
Miscellaneous livestock	2.8	3.0	3.2	3.4	3.3	3.3
Home consumption	0.5	0.4	0.4	0.3	0.3	0.3
Value of inventory adjustment 2/	1.1	1.1	0.2	(1.3)	(1.2)	(1.4)
Services and forestry	16.6	17.9	19.4	20.7	21.6	22.1
Machine and customwork	1.9	2.1	1.9	2.2	2.1	2.0
Forest products sold	2.6	2.7	2.9	2.9	3.0	3.1
Other farm income	4.6	4.4	5.2	5.9	6.1	5.8
Gross imputed value of farm dwellings	7.6	8.7	9.3	9.8	10.5	11.2
Final agricultural sector output	190.2	207.8	203.6	226.2	224.1	223.8
Less:						
Intermediate consumption outlays	100.6	104.9	109.0	112.4	116.3	115.0
Farm origin	41.2	41.3	41.6	42.5	45.3	43.9
Feed purchased	21.4	22.6	23.8	25.2	25.1	24.3
Livestock and poultry purchased	14.6	13.3	12.3	11.1	13.9	13.3
Seed purchased	5.2	5.4	5.5	6.1	6.4	6.4
Manufactured inputs	23.1	24.4	26.2	28.4	28.4	28.6
Fertilizer and lime	8.4	9.2	10.0	10.9	10.8	11.0
Pesticides	6.7	7.2	7.7	8.5	8.7	8.8
Fuel and oils	5.3	5.3	5.4	5.7	5.7	5.7
Electricity	2.7	2.7	3.0	3.2	3.1	3.1
Other intermediate expenses	36.2	39.2	41.2	41.5	42.6	42.5
Repair and maintenance of capital items	9.2	9.1	9.5	10.3	10.7	10.8
Machine hire and custom work	4.4	4.8	4.8	4.7	4.9	4.9
Marketing, storage, and transportation	5.6	6.8	7.2	6.8	7.2	7.2
Contract labor	1.8	1.8	2.0	2.1	2.2	2.3
Miscellaneous expenses	15.2	16.7	17.8	17.6	17.6	17.3
Plus:						
Net government transactions	6.9	1.0	0.1	0.0	0.7	(0.1)
+ Direct government payments	13.4	7.9	7.3	7.3	8.1	7.4
-Vehicle registration and licensing fees	0.4	0.4	0.5	0.4	0.4	0.4
-Property taxes	6.2	6.5	6.7	6.8	7.0	7.1
Gross value added	96.5	103.9	94.7	113.9	108.5	108.7
Less:						
Capital consumption	18.4	18.7	18.9	18.9	19.0	19.1
NET VALUE ADDED	78.2	85.2	75.8	94.9	89.5	89.6
Factor payments	35.1	37.0	39.1	42.7	43.5	44.0
Employee compensation	13.2	13.5	14.3	15.2	16.0	16.5
Net rent received by nonoperator landlords	11.0	11.7	12.0	14.3	14.1	13.9
Real estate and nonreal estate interest	10.8	11.7	12.7	13.2	13.4	13.6
Net Farm Income	43.1	48.3	36.7	52.2	46.0	45.6

F= forecast

1/ Final sector output is the gross value of the commodities and services produced within a year. Net value-added is the sector's contribution to the National economy and is the sum of the income from production earned by all factors-of- production. Net farm income is the farm operators' share of income from the sector's production activities. The concept presented is consistent with that employed by the Organization for Economic Cooperation and Development. 2/ A positive value of inventory change represents current-year production not sold by December 1. A negative value is an offset to production from prior years included in current-year sales.

USDA/ Economic Research Service. Revised 12/23/1997. Next revision: March 1998
If you have questions, E-mail Dave Peacock at dpeacock@econ.ag.gov

Appendix table 2 – Farm income statements, 1993-98F

	1993	1994	1995	1996	1997F	1998F
Billion dollars						
Cash income:						
1. Cash receipts	177.7	181.2	187.7	202.3	200.7	201.1
Crops 1/	87.5	93.1	100.7	109.4	108.0	106.4
Livestock	90.2	88.2	87.0	92.9	92.7	94.7
2. Direct government payments	13.4	7.9	7.3	7.3	8.1	7.4
3. Farm-related income 2/	9.0	9.2	10.1	11.0	11.2	10.9
4. Gross cash income (1+2+3)	200.1	198.3	205.0	220.6	220.1	219.4
5. Cash expenses 3/	141.2	147.6	153.9	160.6	165.6	164.8
6. NET CASH INCOME (4-5)	58.8	50.7	51.2	59.9	54.5	54.6
Farm income:						
7. Gross cash income (1+2+3)	200.1	198.3	205.0	220.6	220.1	219.4
8. Nonmoney income 4/	8.1	9.2	9.8	10.2	10.9	11.6
9. Inventory adjustment	-4.5	8.2	-3.9	2.7	1.3	0.1
10. Total gross income (7+8+9)	203.6	215.7	210.9	233.5	232.2	231.2
11. Total expenses	160.5	167.5	174.2	181.3	186.2	185.6
12. NET FARM INCOME (10-11)	43.1	48.3	36.7	52.2	46.0	45.6

F = forecast. Totals may not add due to rounding.

1/ Includes payments received from CCC for placements of crops under nonrecourse loans.

2/ Income from machine hire and custom work, forest product sales, custom feeding service fees, and other farm sources.

3/ Excludes expenses for onfarm operator dwellings and noncash items such as capital consumption and perquisites to hired labor.

4/ Includes the value of home consumption of farm products plus imputed rental value of operator dwellings.

USDA/Economic Research Service

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Appendix table 3--Deriving farm operator household income estimates from the Agricultural Resource Management Study (ARMS) that are consistent with Current Population Survey (CPS) methodology, 1993-98F 1/

	1993	1994	1995	1996P	1997F	1998F
Dollars per farm						
Net cash farm business income 2/	11,248	11,389	11,218	13,502	n.a.	n.a.
Less depreciation 3/	6,219	6,466	6,795	6,906	n.a.	n.a.
Less wages paid to operator 4/	454	425	522	531	n.a.	n.a.
Less farmland rental income 5/	534	701	769	672	n.a.	n.a.
Less adjusted farm business income due to other household(s) 6/	872	815	649	1,094	n.a.	n.a.
Dollars per farm operator household						
Equals adjusted farm business income	3,168	2,981	2,484	4,300	n.a.	n.a.
Plus wages paid to operator	454	425	522	531	n.a.	n.a.
Plus net income from farmland rental 7/	n.a.	n.a.	1,053	1,178	n.a.	n.a.
Equals farm self-employment income	3,623	3,407	4,059	6,009	n.a.	n.a.
Plus other farm-related earnings 8/	1,192	970	661	1,898	n.a.	n.a.
Equals earnings of the operator household from farming activities	4,815	4,376	4,720	7,906	5,196	5,154
Plus earnings of the operator household from off-farm sources 9/	35,408	38,092	39,671	42,455	42,292	43,709
Equals average farm operator household income comparable to U.S. average household income, as measured by the CPS	40,223	42,469	44,392	50,361	47,488	48,862
Dollars per U.S. household						
U.S. average household income 10/	41,428	43,133	44,938	47,123	n.a.	n.a.
Percent						
Average farm operator household income as percent of U.S. average household income	97.1	98.5	98.8	106.9	n.a.	n.a.
Average operator household earnings from farming activities as percent of average operator household income	12.0	10.3	10.6	15.7	n.a.	n.a.

P = Preliminary. F = forecast. n.a. = not available.

1/ This table derives farm operator household income estimates from the Agricultural Resource Management Study (ARMS) that are consistent with Current Population Survey (CPS) methodology. The CPS, conducted by the Census Bureau, is the source of official U.S. household income statistics. The CPS defines income to include any income received as cash. The CPS definition departs from a strictly cash concept by including depreciation as an expense that farm operators and other self-employed people subtract from gross receipts when reporting net cash income.

2/ A component of farm sector income. Excludes income of contractors and landlords as well as the income of farms organized as nonfamily corporations or cooperatives and farms run by a hired manager. Includes the income of farms organized as proprietorships, partnerships, and family corporations.

3/ Consistent with the CPS definition of self-employment income, reported depreciation expenses are subtracted from net cash income. The ARMS collects farm business depreciation used for tax purposes.

4/ Wages paid to the operator are subtracted here because they are not shared among other households that have claims on farm business income. These wages are added to the operator household's adjusted farm business income to obtain farm self-employment income.

5/ Gross rental income is subtracted here because net rental income from the farm operation is added below to income received by the household.

6/ More than one household may have a claim on the income of a farm business. On average, 1.1 households share the income of a farm business.

7/ Includes net rental income from the farm business. Also includes net rental income from farmland held by household members that is not part of the farm business. In 1993 and 1994, net rental income was collected as part of off-farm income.

8/ Wages paid to other operator household members by the farm business and net income from a farm business other than the one being surveyed. In 1996, also includes the value of commodities provided to household members for farm work.

9/ Wages, salaries, net income from nonfarm businesses, interest, dividends, transfer payments, etc. In 1993 and 1994, also includes net rental income from farmland. 10/ From the CPS.

Sources: U.S. Dept. of Agriculture, Economic Research Service, 1993, 1994, and 1995 Farm Costs and Returns Survey (FCRS), and 1996 Agricultural Resource Management Study (ARMS) for farm operator household data. For information on household income contact: Bob Hoppe (202) 694-5572. Email rhoppe@econ.ag.gov.

Appendix table 4 – Cash receipts, 1993-98F

	1993	1994	1995	1996	1997F	1998F
Billion dollars						
Crop receipts 1/	87.5	93.1	100.7	109.4	108.0	106.4
Food grains	8.2	9.5	10.4	11.5	10.6	10.2
Wheat	7.5	7.9	9.1	10.0	8.8	8.4
Rice	0.7	1.7	1.3	1.6	1.7	1.7
Feed grains and hay	20.2	20.4	24.3	28.1	25.4	25.1
Corn	14.6	14.7	18.6	21.6	18.4	18.5
Sorghum, barley, and oats	2.0	2.0	2.3	3.0	2.5	2.3
Oil crops	13.2	14.7	15.5	17.8	19.8	19.2
Soybeans	11.8	12.8	13.9	16.2	18.3	17.6
Peanuts	1.0	1.2	1.0	1.0	1.0	1.0
Cotton lint and seed	5.2	6.7	6.9	7.5	7.0	6.7
Tobacco	2.9	2.7	2.5	2.8	2.9	2.9
Fruits and nuts	10.3	10.3	11.1	11.7	11.4	10.8
Vegetables	13.4	13.9	14.9	14.3	14.6	15.0
Greenhouse & nursery	9.6	10.0	10.4	10.9	11.5	11.9
Livestock receipts 2/	90.2	88.2	87.0	92.9	92.7	94.7
Red meats	47.7	46.8	44.8	44.4	46.6	47.9
Cattle and calves	37.3	36.4	34.0	31.1	33.6	35.3
Hogs	10.0	9.9	10.3	12.6	12.4	12.0
Sheep and lambs	0.5	0.5	0.6	0.6	0.6	0.6
Poultry and eggs	15.5	18.4	19.1	22.3	21.8	22.7
Broilers	9.2	11.4	11.8	13.9	14.2	15.2
Turkeys	2.4	2.6	2.8	3.1	2.9	2.9
Eggs	3.4	3.8	3.9	4.8	4.1	3.9
Dairy products	19.7	19.9	19.9	22.8	21.0	20.7
TOTAL RECEIPTS	177.7	181.2	187.7	202.3	200.7	201.1

F = forecast. Totals may not add due to rounding.

1/ Includes sugar, seed, and other miscellaneous crops.

2/ Includes miscellaneous livestock and livestock products.

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Appendix table 5 -- Farm production expenses, 1993-98F

	1993	1994	1995	1996	1997F	1998F
	Billion dollars					
Farm origin inputs	41.2	41.3	41.6	42.5	45.3	43.9
Feed purchased	21.4	22.6	23.8	25.2	25.1	24.3
Livestock and poultry purchased	14.6	13.3	12.3	11.1	13.9	13.3
Seed purchased	5.2	5.4	5.5	6.1	6.4	6.4
Manufactured inputs	23.1	24.4	26.2	28.4	28.4	28.6
Fertilizer & lime	8.4	9.2	10.0	10.9	10.8	11.0
Fuels and oils	5.3	5.3	5.4	5.7	5.7	5.7
Electricity	2.7	2.7	3.0	3.2	3.1	3.1
Pesticides	6.7	7.2	7.7	8.5	8.7	8.8
Total interest charges	10.8	11.7	12.7	13.2	13.4	13.6
Short-term interest	5.3	6.0	6.7	6.9	7.0	7.1
Real estate interest	5.5	5.8	6.0	6.4	6.4	6.5
Other operating expenses	52.4	53.1	56.0	57.1	58.9	59.4
Repair and maintenance	9.2	9.1	9.5	10.3	10.7	10.8
Hired & contract labor expenses	15.0	15.3	16.3	17.3	18.2	18.8
Machine hire & custom work	4.4	4.8	4.8	4.7	4.9	4.9
Marketing, storage, and transportation	5.6	6.8	7.2	6.8	7.2	7.2
Misc. operating expenses	18.2	17.1	18.3	18.0	18.1	17.8
Overhead expenses	35.6	36.9	37.6	40.1	40.1	40.1
Capital consumption	18.4	18.7	18.9	18.9	19.0	19.1
Property taxes	6.2	6.5	6.7	6.8	7.0	7.1
Net rent to non-operator landlords	11.0	11.7	12.0	14.3	14.1	13.9
TOTAL PRODUCTION EXPENSES	160.5	167.5	174.2	181.3	186.2	185.6
Noncash expenses	15.2	15.4	15.5	15.4	15.5	15.5
Labor perquisites	0.4	0.4	0.6	0.6	0.6	0.6
Net capital consumption	14.8	14.9	14.9	14.8	14.9	14.9
Cap. cons. excl. dwellings	16.2	16.3	16.3	16.2	16.3	16.3
-Landlord capital consumption 1/	1.4	1.4	1.4	1.4	1.4	1.4
Dwelling expenses	4.1	4.5	4.8	5.2	5.2	5.2
Capital consumption	2.2	2.4	2.6	2.7	2.8	2.8
Interest 3/	0.4	0.4	0.4	0.4	0.5	0.5
Taxes	0.7	0.8	0.8	0.9	0.9	0.9
Repairs & maintenance	0.5	0.5	0.5	0.8	0.5	0.5
Insurance	0.3	0.4	0.4	0.4	0.4	0.4
CASH EXPENSES 2/	141.2	147.6	153.9	160.6	165.6	164.8

F= Forecast

1/ Sector capital consumption minus landlord capital consumption equals net capital consumption excluding dwellings.

2/ Total expenses minus noncash and operator dwelling expenses.

Appendix table 6--Farm business balance sheet, 1993-98F

	1993	1994	1995	1996	1997F	1998F
Billion dollars						
Farm assets	910.7	943.0	985.4	1,034.9	1,083.0	1,131.5
Real estate	678.3	712.4	761.3	805.4	852.9	895.6
Livestock and poultry	72.8	67.9	57.8	60.1	58.5	59.0
Machinery and equipment	86.0	86.7	86.7	85.5	90.0	92.7
Crops stored 1/	23.2	23.1	27.2	30.6	28.0	29.0
Purchased inputs	3.8	5.0	3.4	4.4	4.7	4.5
Financial assets	46.5	47.9	49.0	48.9	49.0	50.5
Farm debt	142.2	147.1	151.0	156.2	162.2	167.6
Real estate 2/	76.3	78.0	79.6	81.9	84.1	86.5
Nonreal estate	65.9	69.1	71.5	74.2	78.1	81.2
Farm equity	768.5	795.9	834.3	878.7	920.8	963.8

F=Forecast

1/ Non-CCC crops held on farm plus value above loan rate for crops held under CCC.

2/ Includes CCC storage and drying facility loans.

Appendix table 7--Farm sector rates of return, 1993-98F

	1993	1994	1995	1996	1997F	1998F
Percent						
Rate of return on assets	2.9	3.6	2.1	3.8	3.7	3.5
Real capital gains on assets	2.4	1.3	3.1	2.5	2.0	1.7
Total real return on assets 1/	5.4	4.9	5.2	6.3	5.7	5.2
Average interest rate paid on debt	7.4	7.8	8.3	8.3	8.0	7.8
Real capital gains on debt	2.3	2.3	2.5	2.3	3.4	3.8
Real cost of debt 2/	5.2	5.5	5.8	6.0	4.6	4.0
Rate of return on equity	2.1	2.8	1.0	2.9	2.9	2.6
Real capital gains on equity	3.3	2.0	4.1	3.4	2.7	2.4
Total real return on equity 3/	5.4	4.8	5.1	6.3	5.6	5.0
Real net return on assets financed by debt 4/	0.2	-0.6	-0.5	0.3	1.1	1.2

F = forecast. Numbers may not add due to rounding.

1/ Rate of return on assets from current income plus rate of return from real capital gains.

2/ Average interest rate paid on farm debt minus real capital gains on debt.

3/ Rate of return on equity plus rate of return from real capital gains.

4/ Total real return on farm assets minus the real cost of debt. When the total real rate of return on assets exceeds the total real cost of farm debt, debt financing is advantageous.

Appendix table 8 – Farm financial measures, 1993-98F

	1993	1994	1995	1996	1997F	1998F
	Ratio					
Liquidity ratios:						
Farm business debt service coverage 1/	2.55	2.17	2.10	2.33	2.11	2.10
Debt servicing 2/	0.14	0.14	0.15	0.14	0.14	0.15
Times interest earned ratio 3/	5.55	5.67	4.41	5.47	4.96	4.90
Solvency ratios:						
Debt/asset 4/	15.6	15.6	15.3	15.1	15.0	14.8
Debt/equity 5/	18.5	18.5	18.1	17.8	17.6	17.4
Profitability ratios:						
Return on equity 6/	2.1	2.8	1.0	2.9	2.9	2.6
Return on assets 7/	2.9	3.6	2.1	3.8	3.7	3.5
Financial efficiency ratios:						
Gross ratio 8/	70.6	74.4	75.0	72.8	75.2	74.9
Interest to gross cash farm income 9/	5.2	5.7	6.0	5.8	5.9	6.0
Asset turnover 10/	22.4	21.4	21.3	21.8	20.8	19.8
Debt burden ratio (net cash income plus interest/farm debt) 11/	49.3	42.9	42.6	47.3	42.4	41.1

F = forecast.

1/ Assesses the ability of farm businesses to repay interest and principal associated with farm business debt from net cash farm income. Higher values indicate a better cash position.

2/ Indicates the proportion of gross cash farm income needed to service debt. Lower values indicate a relatively better cash position.

3/ Focuses on the ability to meet interest payments out of net farm income. A higher value of the times interest-earned ratio indicates that net farm income covers more interest expense and that operator equity is less exposed to risk.

4/ Indicates the relative dependence of farm businesses on debt and their ability to use additional credit without impairing their risk-bearing ability.

5/ Measures the relative proportion of funds provided by creditors (debt) and owners (equity).

6/ Measures the per dollar returns to equity capital employed in the farm business from current income.

7/ Measures the per dollar return to farm assets from current income.

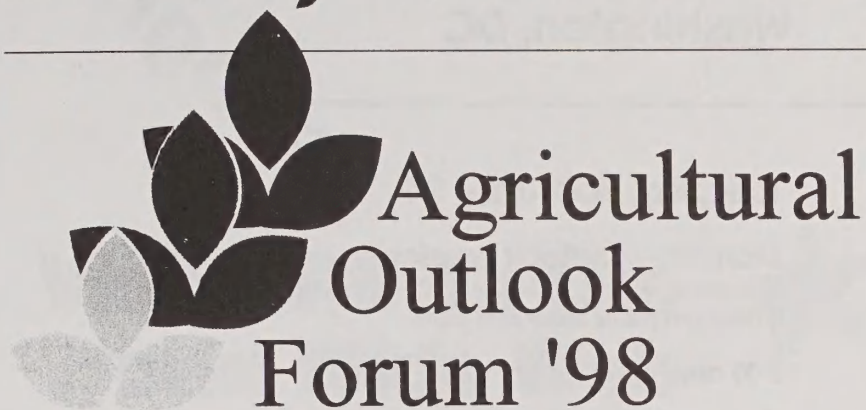
8/ Gives the proportion of gross cash income absorbed by cash production expenses. The higher the value of the ratio, the less efficient the farm sector is considered to be.

9/ Gives the proportion of gross farm revenue absorbed by interest payments. Higher values indicate a relatively fixed expense structure and less flexibility in meeting expenses as they arise.

10/ Measures the gross cash farm income generated per dollar of farm assets. The higher the value of the ratio relative to similar sized operations, the more efficiently the farm business uses its assets.

11/ The debt burden ratio reflects the strain placed on farm earnings to meet farm debt repayment obligations.

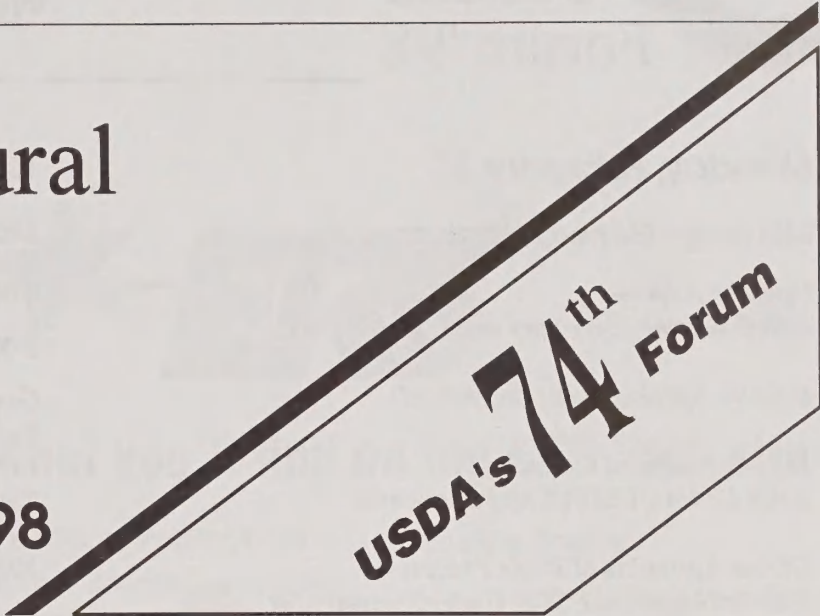
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Outlook Forum program on following page

Monday, February 23

Morning—General Sessions

Opening Address

Dan Glickman, Secretary of Agriculture

Keynote Speaker (to be announced)

U.S. Agricultural Outlook

Keith Collins, USDA Chief Economist

Global Agricultural Trade Prospects

*Gus Schumacher, USDA Under Secretary for
Farm and Foreign Agricultural Services*

Panel: Agriculture's New Frontiers

Debate and discussion on risk management, expanding global markets, food safety, environmental issues, biotechnology, and new marketing approaches

Afternoon—Breakout Sessions

2:00-3:30 pm—concurrent

New Frontiers for Agricultural Exports

Opportunities and developments in Latin America, Africa, and Eastern Europe

Food Safety Issues

Update on HACCP for meat inspection; delivering safe food to consumers; industry and farmer perspectives

Economic Opportunities for Small Farms

Providing credit and economic opportunities; findings of USDA's Commission on Small Farms

Economic and Scientific Responses to Risk Management

Emerging private-sector risk management instruments; promoting farmers' understanding of risk; a farmer's perspective

3:45-5:15 pm—concurrent

Coping with Sanitary and Phytosanitary Trade Barriers

How food exporters are coping; the role of international standards; policy issues under negotiation

Biotechnology Innovations and Issues

Emerging and future bio-engineered commodities; issues for crop producers; the future of insect-resistant crops

Marketing Organic Food Products

Production and marketing trends; industry developments

Conservation Issues for the New Millennium

Conservation programs after 2000; nutrient management; global climate change and soil conservation

6:00 pm—Forum Dinner

With featured speaker

Tuesday, February 24

Morning—Outlook Sessions

Year-ahead outlook by USDA analysts; discussion by private and public sector specialists

8:00 am—concurrent

Grains and Oilseeds

Dairy

Fruit and Vegetables

Tobacco

10:00 am—concurrent

Livestock and Poultry

Sweeteners

Farm Finance—

Financing small farms; loan prospects and competitiveness of small rural businesses; farm business challenges and financial prospects

Noon Luncheons

Grains and Oilseeds; Cotton; Livestock; Sweeteners

Afternoon—Breakout Sessions

1:45-3:15 pm—concurrent

International Marketing Challenges in the Coming Decade

Trends in exporting processed products; new retail approaches; new potential for dairy exports

Market Information Needs of the 21st Century

Role of the Federal government in a changing marketplace; perspectives of producers, industry, and private-sector and government information providers

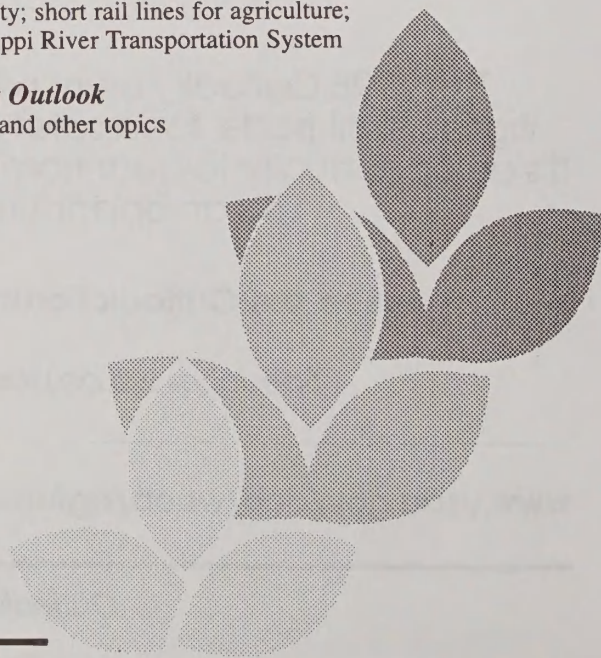
Infrastructure Changes Affecting Agriculture:

Maintaining a Competitive Edge

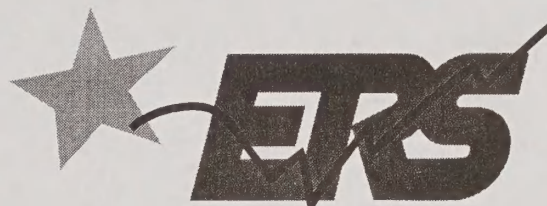
Rail system capacity; short rail lines for agriculture; the Upper Mississippi River Transportation System

Food Marketing Outlook

Retail food prices and other topics



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